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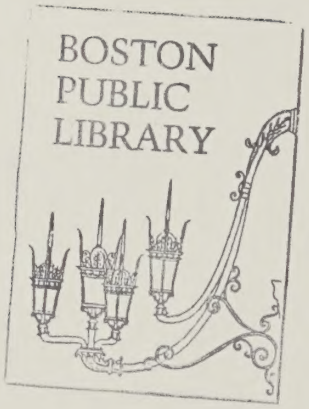
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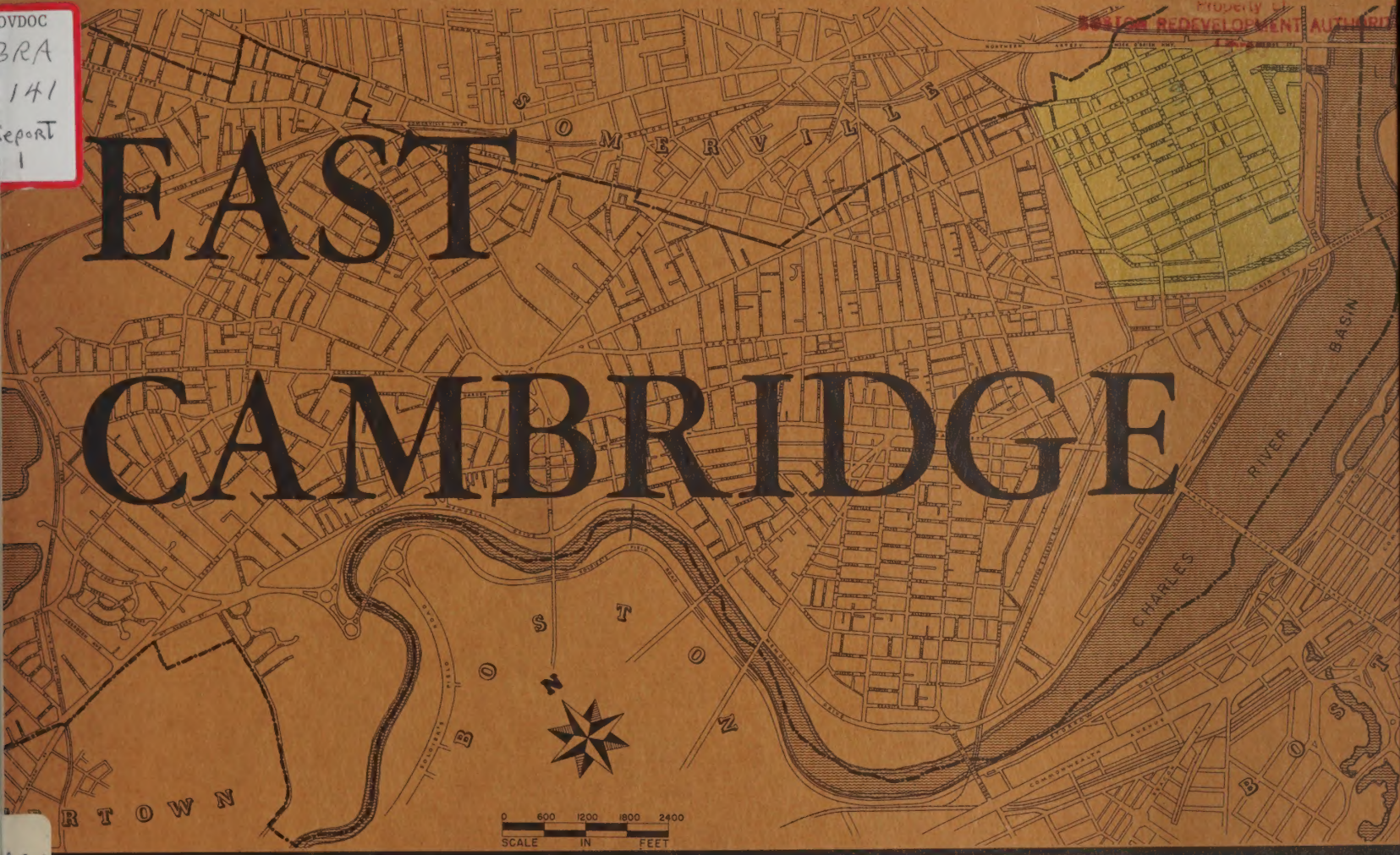

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SURVEY OF ARCHITECTURAL HISTORY IN CAMBRIDGE

REPORT ONE:

EAST CAMBRIDGE

CAMBRIDGE HISTORICAL COMMISSION
CAMBRIDGE, MASSACHUSETTS

CAMBRIDGE HISTORICAL COMMISSION,
CITY OF CAMBRIDGE
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1. CAMBRIDGE AND ENVIRONS IN THE SEVENTEENTH CENTURY.

FOREWORD

I

The Cambridge Historical Commission Ordinance of June 24, 1963, gave to the Commission thereby established, in addition to statutory functions under the Historic Districts Act with respect to sixty-five buildings in four historic districts, the power and duty:

> to conduct a survey of Cambridge buildings for the purpose of determining those of historic significance architecturally or otherwise, and pertinent facts about them, acting in collaboration with the Planning Board and the Redevelopment Authority to the extent either may from time to time be able to undertake such work, and to maintain and from time to time revise detailed listings of historic sites and buildings in Cambridge, and data about them, appropriately classified with respect to national, state or local significance, to period or field of interest, or otherwise.

The Cambridge Historic Districts Study Committee Final Report, which proposed the ordinance, stated the foremost present need in historic conservation for Cambridge to be a professional survey to identify, evaluate, and classify buildings of architectural and historical significance throughout the city.

The Commission, which held its first meeting November 13, 1963, requested the City Manager to include in the City Budget for 1964 funds to permit commencement of such a survey. The Budget as approved by the City Council in March included $15,000 for the work of the Historical Commission, the major portion being for the survey.

II

The Commission's first meetings were devoted almost exclusively to public hearings and consideration of applications for certificates of appropriateness for demolitions and alterations in the Cambridge Common Historic District, and working out procedures for such cases. The ordinance authorized appointment of advisory committees by the City Manager on recommendation of the Commission, and it soon became apparent that such committees are needed in order to carry out the purposes of the ordinance in addition to historic district administration. Four such advisory committees were appointed in May, 1964.

The following were appointed an Architectural Historical Survey Advisory Committee, to give overall advice, assistance and review for the survey:

Prof. Kenneth J. Conant, Co-Chairman
Prof. Henry A. Millon, Co-Chairman
Prof. James S. Ackerman
Mr. Walter E. Campbell
Prof. John Coolidge
Mrs. Jane Garrett
Mr. Roger Gilman
Mr. Rupert B. Lillie
Rep. Thomas P. O'Neill, Jr.
Mr. Hartwell Pond
Prof. Eduard Sekler
Mrs. Pearl Wise

It was decided to commence the survey with a study of East Cambridge and the following were appointed as an East Cambridge Survey Advisory Committee to give advice and review the work on that part of the city:

Mr. Hugh M. Lyons, Chairman
Mr. John H. Campbell
Monsignor Michael J. Costello
Mr. James F. Fitzgerald
Mr. George Lakschewitz
Judge Frederick V. McMenimen

The Study Committee Report stated the second most important present need to be greater publicity for Cambridge historic buildings and sites, and the ordinance authorized the Commission to arrange for markers, maps, brochures, and descriptive material organized for convenient walks and tours, or otherwise. The following were appointed a Markers, Trails, and Brochures Advisory Committee, and it is hoped that their work can proceed independently of the survey, although drawing on it where appropriate:

Mr. William P. Dooley, Chairman
Mr. Frank Buda
Mr. William C. Conway
Mr. William A. Edmonds
Rev. Ralph N. Helverson
Mr. John Briston Sullivan
Mr. Frank N. Townsend
Mr. Bradford Washburn

In order to assure best availability and use of historical source materials about the city and to review survey and other publications for historical accuracy and perspective the following were appointed a History and Historical Sources Advisory Committee:

Prof. Thomas H. D. Mahoney, Co-Chairman
Mr. Wendell D. Garrett, Co-Chairman
Prof. Bernard Bailyn
Prof. Crane Brinton
Prof. Reuben A. Brower
Mr. Robert H. Haynes
Mr. Arthur D. Kaledin
Prof. Norman Pettit
Mr. John W. Wood

The Commission has also sought advice and assistance from those chiefly responsible in the two cities whose survey experience is most helpful for Cambridge. Mrs. Antoinette Downing who did the principal architectural evaluation for Providence's College Hill Demonstration Grant Study of 1958, and is Chairman of the resulting Historical Commission, gave advice in the initial stages and has since made several trips to Cambridge to consult with our staff and advise on procedures and evaluate progress. Dr. Walter Muir Whitehill, Chairman of Boston's Historical Conservation Committee, has also been most helpful. Their field work has been completed for most of Boston, and their reports are in progress, of which that on Beacon Hill, The North Slope, 1963, is the only one yet available. It was published in advance of the rest on account of pendency of legislation, which was then enacted, extending the Beacon Hill Historic District. We are also fortunate to have as Co-Chairman of our main Survey Advisory Committee Professor Millon, co-conductor of the 1954 survey on which the original Beacon Hill Historic District Act was based.

III

With advice from Mrs. Downing, Dr. Whitehill, Professor Millon and various members of the Architectural Historical Survey Advisory Committee, and after considerable searching for architectural historians sufficiently competent and available, the Commission decided to start the survey in the 1964 summer academic vacation, and arranged three months full time employment of the following survey staff for that period:

Survey Staff:

Dr. Bainbridge Bunting, Professor of Fine Arts at the University of New Mexico (currently on sabbatical leave), whose doctoral thesis at Harvard on the architecture of Boston's Back Bay gives him special competence in 19th century styles so prevalent in Cambridge.

Robert B. Rettig, A. B. Harvard 1961, A. M. Harvard 1963, now in his third year of graduate work in the Harvard Department of Fine Arts, whose special field is American architectural history.

Stephen C. Lockwood, A. B. Harvard 1963, now in his second year of graduate work at the Harvard School of Design, whose thesis on the 18th and 19th century Salem shipping firm of Augustine Heard and Co. is being published by the East Asia Research Center.

Robert H. Nylander, A. B. University of Virginia 1964, author of several articles published by the Society for Preservation of New England Antiquities' quarterly magazine, Old Time New England, who had prior architectural survey experience with the Boston Redevelopment Authority.

In addition, Louis E. Cellineri, a Harvard undergraduate history major, and native of East Cambridge, served as a Survey Associate for the first two months, working on documentation of East Cambridge buildings prior to report preparation, and Mrs. Elisabeth B. MacDougall, A. B. Vassar 1946, A.M. N.Y.U. 1954, an experienced architectural historian, served part time as a Survey Associate, and is continuing in such work for the Commission on a part time basis during the current academic year while also serving as a Teaching Fellow in Fine Arts at Harvard. The Director and Associates all had prior connections and familiarity with Cambridge. Miss Bonnie Orr, a recent graduate of Smith and a free-lance photographer of Cambridge, did most of the photographic work.

The Commission and the Survey Staff have been aided throughout by the Cambridge Planning Director, Alan McClennen, who serves as Secretary to the Commission, and by Harold Myer, Assistant Director, without whose advice and assistance the layout and production of the present brochure would have been impossible. The Planning Department has provided the necessary office space and facilities, and Mrs. Juanita Ward and Miss Maureen Clarke of the Department have ably taken care of the secretarial needs. The City Engineering and Building Departments have also been cooperative.

The Historic American Building Survey of the National Park Service sent its photographer, Mr. Jack Boucher, to Cambridge in August 1964 to photograph nineteen buildings selected by the Survey staff -- all 19th Century except one 18th -- in return for the staff's gathering the documentation and data required by this program. The examples were selected both for usefulness to this report and to the HABS program. The public should be able to obtain copies by year end. It is hoped that the photographic record will be continued until Cambridge's most significant and representative buildings are thus recorded and available for study.

IV

The College Hill Study points out various uses of architectural historical surveys - as an inducement to private preservation, as an aid in attracting visitors, as a guide to urban renewal and rehabilitation determinations, to guide institutional expansion, for guiding public works projects, to help determine boundaries for historic district controls, for developing the city's master plan and for arousing general community interest. We hope that the Cambridge survey, as now started and proposed to be continued, may serve these varied uses. We hope that through the processes of identification and documentation, classification and evaluation, interpretation and presentation, better understanding can be had of which surviving buildings, sites and districts are most worth preservation or attention. We hope that such understanding can aid individual and institutional owners and public authorities in making decisions about historically significant properties that will give the future the most enrichment, both from the past and from the new, and will take the best advantage of the City's unique physical heritage.

To serve such varied uses and meet such hopes the survey needs to consider more buildings and sites than those heretofore generally recognized as landmarks, such as the Revolutionary and Colonial

and ones associated with significant later events or persons. It needs also to consider at least in general outline the economic, social and physical development of the entire city from its earliest beginnings to date, the needs served by its buildings and man-made facilities as originally designed and from time to time changed to meet changing needs, the building materials and techniques from time to time available, the various styles of architecture as they developed, and how they reflected the technical and aesthetic capabilities and thinking of their times, the intrinsic architectural value of particular buildings and their importance and relationship to their neighbors and surroundings, the distinctive characteristics developed in various neighborhoods, and possibilities for future development that may not only help preserve the best examples of past styles as a continuing historical record and vital ingredient of the otherwise ever-changing cityscape, but also help some neighborhoods retain or regain better appearance, livability and vitality by making better use of good older buildings rather than demolishing them.

Survey needs and practicability have been made more apparent by several developments since the Study Committee's Final Report two years ago - progress by the National Park Service in its Landmarks program, establishment under 1963 legislation of a Massachusetts Historical Commission with powers to certify landmarks with owner's consent, authority to municipalities by the same act to establish local historical commissions apart from the Historic Districts Act and with power to make surveys, publication of additional helpful survey studies such as Salem, Historic Area Study - 1963, and Wilmington, North Carolina Historic Area - 1962, an Urban Renewal Authority 1963 brochure on Historic Preservation Through Urban Renewal, 1964 Massachusetts legislation authorizing loans for rehabilitating older properties, and provisions of the Federal Housing Act of 1964 for such loans.

V

Such a survey cannot be made in a few months, no matter how well qualified the staff. Providence spent two years and more than $72,000 (two-thirds being a federal demonstration grant) on its study of 1350 selected buildings, including much more than historical and architectural factors. Boston has had from one to four survey associates working full time for three years, and has now done most of its expected identification and documentation. Of more than 10,000 buildings in Cambridge, a relatively small proportion will probably need to be documented and evaluated in detail. There are some areas where building by building consideration is necessary to establish revealing patterns, and others where the few buildings needing attention can be selected relatively easily.

In order best to benefit from the knowledge and experience of the committee members and others concerned, and to assure the best continuing direction of the work, it is being divided into phases. Reports are proposed to be made from time to time on the various phases to the advisory committees and to those particularly concerned in the city government and elsewhere. Not having federal funds or direct association with urban renewal programs, but having many unusually knowledgeable individuals in the community, our approach accordingly differs somewhat from Providence and Boston and other cities.

The present report comprises two parts. One gives topographical and economic background and a general summary of Cambridge architectural development, and will serve as introduction to detailed studies of particular neighborhoods. The background draws heavily on Wendell D. Garratt's January, 1963 Cambridge Historical Society Paper, The Topographical Development of Cambridge 1793-1896, of which the Commission has obtained reprints for wider circulation. The architectural development gives a frame of reference particularly valuable for the 19th Century, the periods of the City's greatest population growth, and the periods whose architecture has heretofore been least studied. The second part is an architectural survey of East Cambridge. Reasons for selecting this neighborhood first - scarcity of prior studies about it and the styles it exemplifies, a well-defined central area retaining much of its original character and capability of preservation to advantage - are spelled out in more detail in the report.

The survey staff plans next to deal with Dana Hill, which may have to be considered building by building. Cambridgeport, Avon Hill and other neighborhoods will follow, probably with more on associations with historical events and persons, and we hope in due course, more comparative and overall evaluations. We also hope that Harvard may be able to produce an architectural historical evaluation of its buildings in considerably more detail than its fine recent pamphlet Building Harvard - Architecture of Three Centuries, that Massachusetts Institute of Technology can contribute an evaluation of its buildings, and that a study can be produced of the development of industrial and research facilities in Cambridge from the glass works of 1817 to the current NASA proposal using Harvard Trust Company's Cambridge First selections as highlights.

VI

Two phases of the Survey's activities not directly discussed in the present report but reflected therein deserve mention.

The Survey's first action was compilation on cards of a working bibliography of needed source materials on Cambridge - and a working collection of maps, histories, directories and other publications, both now added to the City Planning Department's library. Although these compilations will doubtless continue to grow, they are already sufficient to facilitate further survey work. A bibliography on East Cambridge compiled by Robert Rettig, is herein reproduced.

Albert B. Wolfe, Chairman
Cambridge Historical Commission

PART ONE: INTRODUCTION

Cambridge is a many-faceted city. Abounding in ivory towers, it is one of the most important manufacturing centers in New England; crowded with students and visitors from all over the world, it still has a high percentage of home ownership; a stronghold of the old Puritan families, it is also a haven for those newly arrived in the country. And in terms of chronological orientation, Cambridge also abounds in contrasts. With a history and tradition equalled by few American communities, the present policies and outlook of the city are notable, and it leads in the technology and research that look to the future. From deep roots and the cross fertilization of ideas from many sources, Cambridge derives a vitality and a civilization that make it one of the most desirable places in the nation in which to live and work.

The urban environment and architecture of Cambridge is also varied: river bank parks, factories, quiet residential streets, busy retail centers. But probably its architecture best symbolizes visually the events, personages, attitudes, and activities that are associated with the place. Thus important new buildings mingle with those left from the past to bespeak the rich texture of Cambridge life, and neighborhoods of buildings that have stood for 75, 100, or 125 years are still vital. Styles of architecture of many generations mingle with a remarkable harmony, and there is space enough and foliage enough to unify them all in a pleasant man-scaled environment. Cambridge still primarily remains a pedestrian's city. Although there are swarms of automobiles, and skyscrapers have begun to encroach, the old neighborhoods hold their own comparatively well against urban congestion and the formless sprawl of suburbia. Cambridge has suffered less carving up, less population shift, less dislocation than most important cities.

But things do change, and present pressures of more intensive land use and the encroachment of automobiles are taking a much heavier toll than is generally realized. Unless Cambridge is alert, much that has been cherished and long taken for granted can disappear in the piecemeal "advance of progress." Positive efforts are needed to safeguard the beauty of the tree-shaded streets and the integrity of the community's finest buildings. The concern evidenced by the establishment of the Cambridge Historical Commission and this survey come none too soon, for the rate of change is accelerating. The buildings and areas we do not protect today, even if they survive, will be far more difficult to protect fifty years from now. We stand as a bridge between two worlds, the stable nineteenth century and the dynamic future. Our job is to transmit the values and achievements of the past as well as to plan for what is to come. Failing either responsibility, we jeopardize the future. Shall we function as a bridge -- or as a dead end?

Approach to the Study

At the outset of its activity, the Cambridge Historical Commission realized that it needed an accurate description and evaluation of the buildings of architectural and historic significance within the city. Patently, not every old building can be or should be preserved, but before plans for the preservation of one particular area or building are undertaken, a larger, over-all picture must be obtained. There are over 10,000 buildings in the city, and the kind of survey that is needed should take into account the historical events or personages associated with the building, the intrinsic architectural value of the building, and the structure's importance and relationship to the larger urban environment. Obviously this is too large an undertaking to be accomplished on a city-wide basis in a few months.

With limitations of time and staff, it was apparent that the larger undertaking must be broken into parts, one of which could be studied and the results published during the current year. East Cambridge was selected. Previous historians had concentrated on "Old Cambridge," the area adjacent to Harvard Square and the Common; almost nothing had been written on the eastern portions of the city. This, therefore, seemed the place to begin.

Once the survey of East Cambridge architecture is finished, the Historical Commission plans to continue in the rest of the city: Cambridgeport, Dana Hill, the Harvard Square-Brattle Street area, Avon Hill, and North Cambridge. Regardless of whether the findings for each area are presented as a separate report, the survey should be conducted in a consistant and thorough manner.

Advantages of a Survey by Sections

To such an area-by-area approach there are certain advantages. It allows the survey to proceed in manageable stages. More important, it provides an opportunity to isolate and analyze the qualities and distinctions of each neighborhood. In the course of a restricted study the surveyor has a better opportunity to observe the particular configuration of houses fronting on a given street -- variations in front building lines and spacing between houses, the relation of adjacent house masses in scale, silhouette and material. He may analyze the results of differing uses of side and back yards, the intermingling of residential and commercial uses, the repetition of certain architectural features. Separately these may be small things, yet together they constitute the area's particular flavor or character. And as the result

of insights gained in such an approach, the critic can sense the potential and perhaps the best means to develop the architectural heritage of each area.

The limitation of this approach is that the critic can lose his perspective and become so engrossed in the small problems and achievements of a neighborhood that he fails to place his evaluations in a proper frame of reference. A building may be exceptionally good for East Cambridge but only moderately good when compared to the standards of the city as a whole. In an attempt to maintain the larger scale of values, this inventory begins with a summary of Cambridge architecture from the seventeenth century to the present. In addition to providing perspective, the summary may clarify the terminology, chronology and certain architectural concepts which will be used later in the report.

Value and Uses of Survey

A publication of this kind serves to make citizens of a community more aware and more careful of their architectural heritage. A home owner sees his house or his street with new eyes when he learns that it is well over a hundred years old or when he observes photographers and historians coming especially to see it. This may also engender increased community respect and care for the specific house and its neighborhood. A study such as this can also point out the beauty and desirability of many of the old houses for modern living, and it can suggest more accurate and sympathetic methods of restoring old structures. Certainly the survey must indicate the area's important buildings and neighborhoods which should be safeguarded and a few exceptional items that might be considered for incorporation into a historical district. Finally the survey provides the architectural evaluation of the area which should be one of the essential factors considered in all future deliberations on highway construction or urban renewal. As a cultural service and as a necessary ingredient in any intelligent over-all decisions regarding the urban environment, such an architectural survey is an absolute necessity.

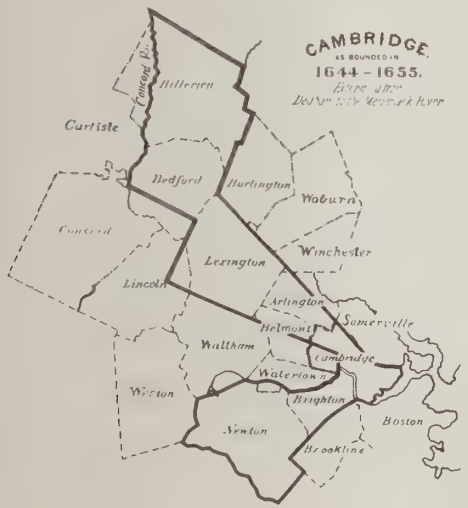
Organization of this Report

The report which follows is divided into two parts. The first portion is intended to serve as a general frame of reference for the series of neighborhood studies of Cambridge architecture. This background section consists of three historical summaries: a brief topographical history of Cambridge, its economic growth, and the city's architectural development from 1630 to the present. The report's second part is devoted to the architecture of East Cambridge. An additional essay is also included on the history of Cambridge canals.

TOPOGRAPHICAL DEVELOPMENT OF CAMBRIDGE

The jurisdictional limits of Cambridge were constantly shifting until the early nineteenth century. At its greatest extent in 1642, the town embraced all of Arlington ("Menotomy"), Billerica, Brighton ("Little Cambridge"), Newton ("Cambridge Village") and parts of Lexington, Watertown, Bedford, Carlisle, and Tewksbury. Except for the area ceeded Belmont in 1859, by 1807 the limits of the town had been reduced much to its present size. The core of Cambridge, the "Village" itself, was a tight cluster of houses south of the College Yard.

Cambridge today is a different city topographically than it was when the first settlers arrived in 1630. The contours of the hills and shoreline were radically changed during the nineteenth century, the city's great period of growth. The building of the bridges, the filling of lowlands and the physical growth resulting from industrialization and immigration each in turn wrought important changes on the landscape. Yet the old paths, set as they were by a topography that no longer exists, still influence the movement of the inhabitants. The city today is a mixture of old conditions overlaid with new engineering.



2. EARLY BOUNDARIES OF CAMBRIDGE.

The material growth of Cambridge was always much limited by its topographical isolation from Boston. Cut off as it was by the Charles River, travel to the city was possible only by one of two circuitous routes -- via Charlestown or Allston. Bridge construction, however, eventually caused the agricultural college town to turn and face the Boston Peninsula, and two new centers of growth sprang up at the bridgeheads. First Cambridgeport grew up around the West Boston Bridge (the site of today's Longfellow Bridge) as a speculative development after 1793. Soon after that East Cambridge developed around the Canal (or Craigie's) Bridge, which was constructed in 1809 where the Charles River Dam now stands.

3. PRINCIPAL BRIDGES ACROSS CHARLES RIVER.

1-2. SEVENTEENTH CENTURY FERRIES.

3. GREAT BRIDGE, 1662.

4. CHARLES RIVER BRIDGE, 1785.

5. WEST BOSTON (LONGFELLOW) BRIDGE, 1793.

6. CANAL (CRAIGIE) BRIDGE, 1809.

7. RIVER STREET BRIDGE, 1813.

8. WESTERN AVENUE BRIDGE, 1824.

9. BROOKLINE (COTTAGE FARM) BRIDGE, 1850.

10. HARVARD BRIDGE, 1889.

The locational advantages of Cambridgeport and East Cambridge were apparent to many manufacturers in the early nineteenth century. The glass, soap, leather, and cordage interests which established themselves in the two new villages (the "port" and the "point") transferred the main political and economic activity out of Old Cambridge, but the latter stubbornly remained the social and intellectual center. Cambridge in the nineteenth century became in reality three distinct villages, separated by interests as well as

topography -- so much so, that in the forties division into two towns along Lee Street was actually contemplated.

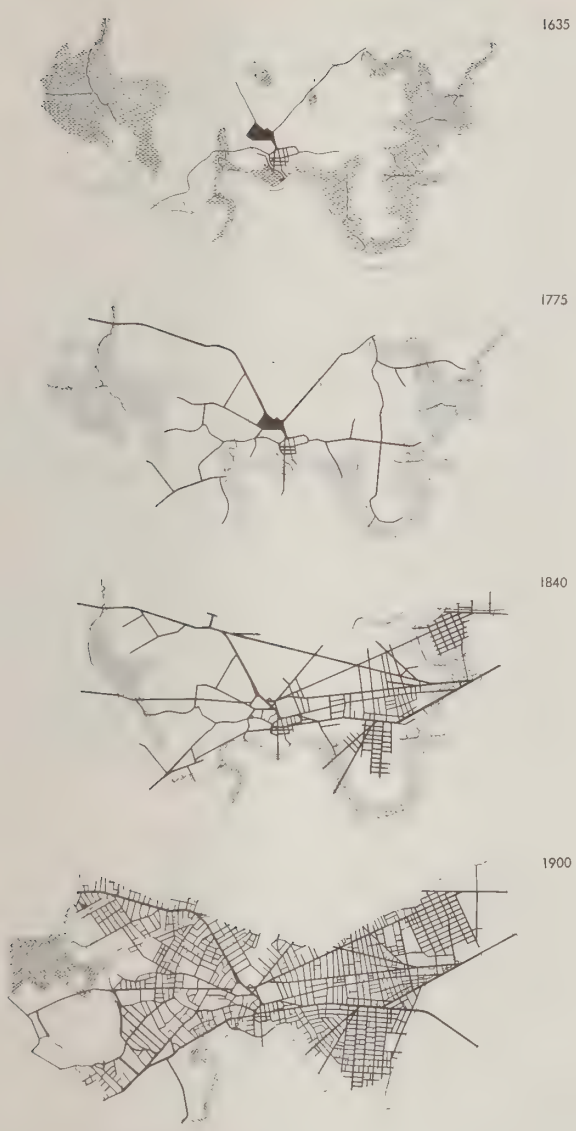
Uniting the three focal points of Cambridge were a series of main arteries which radiated from the Canal and West Boston bridgeheads toward Old Cambridge and the more distant towns of Middlesex County to the west. The transportation system that developed along these radials had an important effect on the growth of the city. The early stages and omnibusses served mainly to carry people to and from Boston, but as intermediate neighborhoods in Cambridge grew in size and importance, a good deal of intra-city traffic was handled as well. When rails were laid for horsecar lines after 1853, they followed the old system of arteries just as modern busses take the same routes today. It was during the era of the horsecar (1853-89) -- not of the subway -- that Cambridge experienced its period of greatest growth.

4. STREET RAILWAYS IN 1875.

The development of local rail transportation served to reinforce earlier settlement patterns since they followed established roads, but at first this gave Cambridge an uneven pattern of development. Commercial buildings stretched out along the transportation arteries. At the junction of car line and other arterial streets, stores, churches and schools were built to meet the needs of the local residents who lived in streets adjacent to the arteries. Thus property development was dense along the radial lines of transportation while the areas in between them long remained rural. Industry located along the railroad, the waterfront, or wherever land could be purchased cheaply. Cambridge in the second half of the nineteenth century grew with its transportation system into a sprawling, unplanned pattern of commercial strips overlaid with irregular side street grids.

5. IN A CAMBRIDGE HORSE-CAR c. 1860.

Immigration and industrialization swelled the population and facilitated the economic growth of the city. The changing landscape of Cambridge in the forties and fifties was a result of the combination of earlier economic successes and failures. The canal system of Cambridgeport, for example, built under the assumption of growing trade, obstructed and frustrated road building and real estate development. For Cambridgeport grew as an industrial not as a commercial center. This was emphasized by the laying of the Grand Junction Railroad through Cambridgeport necessitating a causeway that lay between the port and the open harbor. The flats to the northwest of the Railroad became the site of the important central manufacturing district of Cambridge in the second half of the century.



6. STREET DEVELOPMENT OF CAMBRIDGE

The filling process, transforming useless marsh into valuable real estate to meet the pressing demand for residential and industrial sites, continued throughout the nineteenth century. Projected developments often show streets mapped out on the flats, but more often than not, the filling process did not take place until much later than expected. A series of companies were formed but not until 1874, when a Brookline developer connected East Cambridge and Cambridgeport with the extension of First Street, was real progress made. In the eighties a sea wall was built to the east of First Street and filling began on the flats along the river. At the same time, the Charles River Embankment Co. began to develop the area between the railroad and Portland Street. The area at the head of the Broad Canal, the Binney Fields, was one of the last areas converted to useable land. About the time of the First World War, the filling work culminated in the construction of the Esplanade and Memorial Drive and the building of M.I.T.

The boom of the eighties put pressure on the builders of single and multiple houses. The limited amount of good land for housing and the continued increase in population pressure made subdivision of the old country estates a profitable necessity. The Frost, Norton, and Craigie properties, being surveyed as units, were laid out as the most regular parts of the city. In other areas, open lands were merely overlaid with street grids and frontage lots, and in some cases roads were cut through private property merely to reach new building lots.

As had happened in Boston earlier, the hills were leveled, the marshes filled and the streets widened while the town grew into a real city. The building boom of the eighties was accompanied by the construction of many grand public institutions which dotted the then-impressive boulevards such as Massachusetts Avenue. The construction of gas, water and sewerage systems further aided the growth of the city. By the 1890's, when the streets were being lighted and macadamized, the fluid topographical configuration of the city had settled into the patterns visible today. Yet despite the many changes which had occurred, this street system was closely related to the seventeenth and eighteenth century lines of communication.

Finally in 1912, with the construction of the tidal dam, the Charles River, the force which had played such an important role in the history of Cambridge, was domesticated. So long as the lower Charles remained a tidal basin the city faced away from the River. But with the construction of the Charles River Dam, new buildings were oriented towards the water, just as the city has reoriented itself with the building of the bridges a century earlier.

ECONOMIC DEVELOPMENT OF CAMBRIDGE

For more than a century and a half after its foundation in 1630, Cambridge remained an agricultural village with a small college. Then in 1793 the beginning of bridge construction, combined with an influx of labor from the west, inaugurated the city's growth as a commercial and industrial center. Starting in the forties, immigration supplied the muscle for increasing industrialization, and by the end of the Civil War the industrial product had tripled. The two decades after the war saw many of Cambridge's early nineteenth century concerns disappear and their place taken by industries that remain to this day. In the eighties and nineties the new immigration fired a boom period. Cambridge grew in this century to become Massachusetts' second industrial city. Today it is on its way to being the most important research center in New England

1630-1790

Like so many inland Massachusetts communities in the 17th century, the town of Cambridge was a village of farms. The only difference was the presence of Harvard College. Inhabitants who were neither professors nor college employees received at least part of their support from the land. (Sometimes in the 17th and 18th centuries fees to Harvard were paid in farm produce.) The cluster of houses which made up the "Village" was surrounded by dry meadows to the east and west devoted to grazing cattle, sheep, and oxen. Orchards covered the slopes of the low hills. On the edge of the Village, houses stood in command of their farm lands, only to be swallowed up by the growth of the community in later years.

In 1781, when Cambridge still included Arlington and Brighton, it contained less than 2000 people. The tax list also showed the following property: 220 houses, 246 barns, 1 store and 4 distill-houses; 1446 acres of English mowing, 777 acres of tillage land, 1402 acres of salt & fresh meadow, 3523 acres of pasturing, 1185 acres of wood and unimproved land; 1003 barrels of cider; 219 horses, 187 oxen, 624 cows, 258 sheep and 131 swine.

The only major non-agricultural or commercial activity of the day which still survives, although not without interruption, is the University Press. Established in 1638, this press is the oldest in the country and the ancestor of the printing business which has long been a staple industry of Cambridge.

1790-1840

Cambridge, like much of New England, achieved its growth and prosperity and its form as a city in the nineteenth century. Until 1795, lack of a direct connection with Boston left Cambridge a rural village and stood in the way of population expansion or economic development. At the turn of the century, however, real estate interests realized the value of close ties with the city, and in the space of 30 years built four bridges. The first of these, the West Boston (Longfellow) Bridge, struck the initial sparks of economic growth in Cambridge. This new bridge, unlike the old seventeenth century "Great Bridge", which connected Harvard Square with the Brighton shore, reduced the distance between Old Cambridge and Boston and opened a direct route along Massachusetts Avenue and Main Street which ran right through Cambridge from the agricultural interior of Middlesex County to the markets of Boston. Both the new bridge and the older were wooden trestles with a draw bridge to permit the passage of boats with masts.

Cambridgeport, the community which developed in connection with this new thoroughfare, was meant by its developers to become a commercial center, a protected shallow water port for Boston and the west. Stores and wharves lined the bridge's causeway through the marsh from Pelham's Island to higher ground near what is now Central Square. Canals were dug through the tidal flats. Dams were thrown up to assist in drainage and to provide possible sources of power.

While one ship was actually launched from a Cambridgeport yard, its pretensions as a port were soundly disappointed by the Embargo and the War of 1812, which crippled all New England commerce. The same war caused a diversion of capital from shipping to real estate ventures all over New England. One of these was in nearby East Cambridge where after 1812 another speculative development grew up around the Canal Bridge.

Nonetheless, Cambridgeport was the site of the city's first nineteenth century industrial development. Soap making as it was developed there by Livermore, Crane, and Whitnery in 1804, became one of the great-grandparents of modern Lever Brothers. The ropewalks which sprawled out in the lower port were another staple industry during the first part of the century, and the leather industry began there during the first decade.

But the first major industry to come to Cambridge was glass manufacturing which began in 1814 in East Cambridge. After the Canal Bridge had been built and East Cambridge laid out by the Lechmere Point Corporation, land was bought by the Boston Porcelain and Glass Company. In 1817, this firm failed and sold to new interests under the long famous name of the New England Glass Company.

Under the control of Deming Jarves, a brilliant young chemist, this company was granted charter rights for the manufacture of flint and crown glass. The success of the concern was assured shortly after when Jarves discovered the secret English glass formulas and was given a government monopoly on red lead for paint as well as glass. Although Jarves himself started the equally famous Boston and Sandwich Glass Company in 1826, the New England Glass Company continued to grow. In 1818, the company already employed 40 men. Five years later one hundred more had been added to the payroll. In 1837, two glass companies in Cambridge gave work to 290 men; in 1859 the figure was up to almost 500 employees. In addition to the New England Glass Company, six other smaller glass firms operated in East Cambridge. Among these smaller concerns were the New Englad Glass Bottle Company with a plant at Third and Spring Streets and the Bay State Glass Company at Fourth and Bridge Streets.

7. NEW ENGLAND GLASS WORKS c. 1860.

After the Civil War glass making declined in New England as new processes and cheaper fuels attracted firms to New York State and Ohio. The New England Glass Company, under the direction of William Libbey, left Cambridge in 1888 and transferred to Toledo, Ohio. Two of the giant corporations making glass in America today stem from East Cambridge origins. Libbey-Owens-Ford traces back to the old New England Glass Company, while the Corning Glass Company goes back to the Bay State Glass Company.

By 1825, 3300 people were living in Cambridge. Families driven to the city from the depressed farmlands in Western Massachusetts in the twenties and thirties poured into Cambridge. Between 1820 and 1830 the population of Cambridge nearly doubled. Carpenters and masons were second only glass workers and unskilled laborers in number during the thirties and forties. The brick industry received a solid foothold as the demand for this building and paving product increased. The thirties also saw the establishment of the long famous coach building industry in Cambridgeport. Kimball and Davenport made omnibuses, sleighs and the first aisled railroad cars in its shops at Main and Osborne Streets and helped spur the revolution in transportation that so transformed the country.

1840-1865

During the forties two factors were responsible for the final shift from commercialism to industrialism in Cambridge. First, new machinery for manufacturing had been developed which made large scale production possible while steam saved Cambridge from being at a disadvantage due to its lack of water power. This machinery made feasible the use of a largely unskilled labor supply. The swell of Irish immigration supplied the vital source of cheap labor. The invention of the sewing machine in Cambridge in 1846, in conjunction with immigration made greater Boston the center of the ready made clothing industry in the country despite its disadvantages in geographical location.

By 1845, Cambridge industry employed over 1200 people; the most important were:

Industry	Employees	Value
shoes	91	$450,000
drugs & spices	13	418,000
soap & candles	96	358,000
glass	241	334,000
coaches	127	208,000
dry goods	20	150,000
oil	10	95,000
brick	168	86,000
tobacco	67	47,000
cards	7	41,000
tools	18	40,000
cordage	32	31,000
confections	18	29,000
	908	$2,287,000

In the decade before the Civil War, the total value of Cambridge's products grew to over 5 million dollars, and in 1855 over two thousand people worked in local industries. The food and furniture industries, which became Cambridge staples, got their start at this time. The brush making industry became the second largest employer, and the box business grew quickly. In 1855, the industrial roster was as follows:

Industry	Employees	Value
brick	(not available)	$1,834,000
glass	531	620,000
tobacco	42	388,000
type & printing	215	245,000
brushes	208	192,000
RR cars, coaches, etc.	93	137,000
building stone	72	67,000
furniture	168	27,000
shoes	51	23,000
soap & candles	140	(not available)
	1,520	$3,533,000

1865-1880

The decade after the war saw the introduction of many new enterprises. The pressure of industrial growth required the filling of the lowlands, which in Cambridge, unlike Boston, were hereafter largely devoted to industrial rather than residential purposes. Although heavy machinery manufacturers began to come to Cambridge, the same period saw the decline of the long prominent glass industry. The meat packing and reduction plants of J. P. Squires grew rapidly. The list of major industries shows important newcomers as well as the end of some of the earlier staples.

Industry	Value
slaughtering	$16,000,000
confections	4,131,000
organs	1,036,000
dry goods	1,000,000
soap & candles	928,000
furniture	616,000
leather	605,000
crackers	500,000
iron	420,000
glass	370,000
	$25,606,000

1880-1910

The boom of the eighties and the nineties was the era of big business in Cambridge as well as elsewhere. The number of Cambridge industries which produced a yearly revenue of more than one million dollars grew to include printing and publishing, musical instruments (especially organs and pianos), furniture, clothing, carpenters work, soap and candles, and biscuit baking. By the mid-nineties, the manufacturing of heavy machinery such as hydraulic lifts, boilers, and bridges grossed well over two million dollars. Cambridge also became the third largest packing center of pork in the country, located as it was near the major terminals of the railroads into Boston. J. P. Squire alone employed more than 1000 men in his packing plants.

The building boom that accompanied the new immigration of Canadians, Poles, and Italians to Cambridge put the final architectural stamp on the city as we recognize it today. Between 1890 and 1910, the number of wage earners in Cambridge increased 16% along with the number of industries which expanded seven-fold over the 1890 total.

1910-1940

The First World War gave great impetus to the heavy industries which were now firmly established as the city's chief activity. The value of the industrial product grew from $50 million in 1910 to $140 million in 1920. Cambridge became a versatile industrial community whose products included soap, rubber goods, books, metal products, electrical equipment, furniture, ink, pianos, candy and ice cream. Boston Woven Hose and Lever Bros. each separately employed more men than had all local industry in the middle of the nineteenth century. During this period Cambridge reached its eminency as the second industrial city in the state.

1940-Present

The Second World War initiated important changes. The intellectual and industrial communities of Cambridge, long adjacent but seldom working together, provided a situation favorable to the establishment of research and development as an important aspect of the economy. While heavy industry has undergone significant stagnation since the War, technical industries such as fabricated metals, electrical machinery, and scientific instruments experienced rapid growth. There was a 30-50% decline in Cambridge's five heaviest industries -- food, chemicals, rubber, plastics, machinery -- in the two decades since the War. In that same period the technical output has grown over 35%. The recent award of the huge National Aeronautics and Space Administration laboratory foreshadows the city's increasing pre-eminence in this modern field of enterprise.

SUMMARY OF

CAMBRIDGE ARCHITECTURE

The Seventeenth Century

Little is left of the earliest buildings in Cambridge. The first house within the present city limits was that of Thomas Graves. Built sometime after July 1629, this house stood in what is now East Cambridge, on the north side of Spring Street between Third and Fourth Streets. The only seventeenth century house in East Cambridge, it was torn down about 1820 when that area was developed, and no picture or description of it has been found.

Harvard Square was the village center of Cambridge at a site selected on December 28, 1630. The first houses of this area clustered around that is now the junction of Massachusetts Avenue and the Square. This earliest center was described in 1633 as:

> one of the neatest and best compacted towns in New England, having many fine structures, with many handsome contrived streets ... well stocked with cattle ... and paled in with a general fence ....

"The many fine structures" were for the most part wooden, steep-roofed, gabled houses, framed together of great hewn beams, with hugh pilastered chimneys, overhanging stories, and small paned casement windows. They belonged to a building tradition inherited from Elizabethan England where survivors still can be found in Rye and in the small towns of Suffolk, Somerset and elsewhere. Only one Cambridge house lasted long enough to be recorded in a picture; the only drawing of the Wigglesworth house shows how they all undoubtedly looked. The most complete view of the town and its surroundings as they appeared about 1677 is shown by the diorama in Harvard's Widener Library. As it has for its entire history, the College dominated the scene, and the small, clapboarded, unpainted, gabled houses clustered around it. The street pattern was essentially as it is today (though the streets have been widened).

Parts of only three houses standing in the city today date from the 17th century. This is a small number indeed when compared to Ipswich or Concord, towns of equal size and importance in that period. But the loss of early buildings is understandable in terms of Cambridge's subsequent growth. These houses are the Henry Vassall house (94 Brattle Street), the western end and chimney of which may date as early as 1635-39; the Cooper-Frost-Austin house (21 Linnaean Street) built 1657; and the Hooper-Lee-Nichols house (159 Brattle Street), begun before 1690. Later alterations give all three an 18th centure appearance, but certain features of the Cooper-Frost-Austin house recall the seventeenth century: the pilastered chimney, the overhung gable, the unpainted, exposed framing members inside, and the large fireplaces of the first floor rooms.

The most complete example of a seventeenth century house near Cambridge is the Abraham Brown house in Watertown, built about 1695. Furnished as a museum house, it has been restored as nearly as possible to its original appearance. The earliest part is a very simple two story, gable roofed house of one room plan with a great pilastered end chimney of brick. Its shape and much of its finish and detail are determined by its heavy framed construction. Outside clapboards are hand split, unpainted, and have weathered a dark brown. The windows are small triple casements filled with diamond-shaped panes set in lead cames with wooden guard bars. The front door is made of vertical planks battened together and decorated with a pattern of large-headed, hand-forged nails; painted a bright red, it is a colorful accent on the otherwise dark house.

Inside the rooms are low studded. The heavy framing members -- cornerposts, girts, great summer beam, and even the ground sills and ceiling joists, -- all hewn to satin smoothness, are exposed as part of the room finish. The fireplace in the downstairs room (called the keeping room) takes up most of the chimney wall. The cramped stairs rise against the brick chimney behind the sheathed hall wall in three tight runs of wedge shaped steps. Walls in the first floor room, which served most living purposes, are finished with wide boards applied horizontally. The second floor chamber has vertical sheathing on the chimney wall, but the other three walls are plastered.

Decoration is sparse and consists mainly of chamfered edges of principal framing members and the shallow "shadow" moldings at the joints of the wood sheathing. In the upstairs room, both walls and ceiling are whitewashed. Paint is used sparingly with only a decorative black panel and band painted in the fireplace and around the base of the room.

Larger than the Abraham Brown house, the full-blown seventeenth century Massachusetts house was two stories high with a ground plan of two rooms separated by a central chimney and small stair hall. Sometimes a lean-to, usually composed of a large room flanked by two smaller ones making a five room central chimney plan, was built across the back. Though styles in decoration changed, this basic plan remained standard for simple houses through the eighteenth century.

Eventually newer features such as sash windows, panelled interior walls, plastered ceilings and finely decorated stairs gradually replaced the small casement windows, sheathed walls, exposed beams, and steep, walled-in stairs. All of Cambridge's early dwellings have been torn down or, like the seventeenth century Hooper-Lee-Nichols house were drastically altered in the early eighteenth century. The latter gives an idea of how this overlay of styles fuses together in a transitional manner.

Early Georgian: 1700-1750

The architectural concepts and Classical details of Renaissance Italy were introduced to England by well-known architects like Inigo Jones and Sir Christopher Wren just before and soon after the Cromwell Revolution. From Britain they were slowly transmitted to this country at the beginning of the eighteenth century. The long period in which the Classical styles reached their peak in England, during the reigns of the first four kings named George (1714-1820), is generally called Georgian.

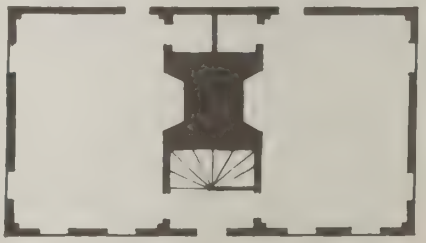
With the establishment of the Church of England in the American Colonies toward the end of the seventeenth century and the resultant introduction of up-to-date English church forms (inspired chiefly by Sir Christopher Wren's churches built after the London Fire of 1664), buildings using Classical detail began to appear in important commercial centers. However, with Puritan-oriented Harvard College to lead it, Cambridge was slow in picking up the Renaissance forms and Early Georgian architecture did not flourish here until about 1725. Nevertheless the first Early Georgian buildings in the community were erected by the college: Old Harvard Hall (1675-1746) and Old Stoughton Hall (1699-1781). The first Harvard Hall, although constructed in the seventeenth century, showed an awareness of symmetry and a consistency of horizontal levels that are essential to Renaissance design. Old Stoughton Hall had elaborate belt courses and segmental pediments. Massachusetts Hall (1718) has early Georgian molded belt courses, panelled chimneys, and like Old Harvard, it has a gambrel roof which allows greater use of the top story. All these buildings, as typical of most American eighteenth century public architecture, were built with a dwelling house scale, enlarged to accommodate public uses by repetition of elements.

One of the finest residences of the Early Georgian period that has survived in Cambridge and one that shows the type in its full development is the Old Presidents' House at Harvard now called Wadsworth House (1726). It is a rectangular box as was the basic seventeenth century house but with very important differences: the house is now symmetrically composed. Instead of having a single central or end chimney, the plan has been opened up by a long central hall with four rooms, two on either side, served by two interior

8. WIGGLESWORTH HOUSE, 1633.

9. COOPER-FROST-AUSTIN HOUSE, 21 LINNAEAN STREET, 1657.

10. ABRAHAM BROWN HOUSE, WATERTOWN, c. 1695.



11. PLAN OF SEVENTEENTH CENTURY HOUSE.

12. MASSACHUSETTS HALL, HARVARD, 1718.

13. WADSWORTH HOUSE, HARVARD, 1726.

14-15. PLAN, WINDOW, WADSWORTH HOUSE.

16-17. PARLOR, STAIR, BRATTLE HOUSE, c. 1727-35.

chimneys (commonly known as the four room, two chimney, central hall plan). The steep-pitched roof of the seventeenth century has here been replaced by a gambrel (double pitch) roof with dormer windows, the most characteristic roof form of this period. Classical elements are the row of large modillion blocks that support the main cornice and the projecting crown moldings over the windows of the first floor. The doorway, generally the chief decorative feature of an eighteenth century house, has been altered. The clapboards of the house are beaded along the lower edges, and, at complete variance with the usual practice, the clapboards meet at the corners with a curious overlap and without the usual vertical corner boards. The sash windows with heavy, projecting frames are typical, and they retain the arrangement of 12/12 or 6/6 with small lights separated by wide muntins.

Later additions to Wadsworth House are the enclosed side piazzas, the front door and portico, and window blinds, but they do not destroy the Early Georgian feeling which is emphasized by the pumpkin yellow paint of the clapboards and the white trimmed windows.

Two other Cambridge houses were similar show places when built: the William Brattle home (c. 1727-35) at 42 Brattle Street and the eastern part of the Henry Vassall house (c. 1736-48) at 94 Brattle Street. They both follow the same basic plan, mass, gambrel roof, and detail, but on a somewhat smaller scale.

The Early Georgian interior had large, high-studded, square rooms, and the framing, still made of big, heavy members, was concealed by casing it in and incorporating it into the decorative scheme of the room. In more modest houses, the stairs still wind up in three steep runs in front of the chimney and frequently keep the closed and molded string course. In the large houses with central hallways, they are built in two easy runs with a broad landing against the rear wall of the house and are often lavishly ornamented with carved and twisted balusters. Carved scrolls decorate the riser ends, now usually set in an open string course. Such stairways are generally framed by an elliptical arch that spans the hall and separates it into a front and back section.

Plastered ceilings uninterrupted by framing elements are universal, and in important houses, all four walls of the main rooms are panelled from floor to ceiling. Panelled window seats are popular, and panelled shutters fold into the reveals. In an ornate scheme used for the finest rooms, round headed or shell cupboards flank the panelled chimney breast, and the walls are divided into bays by Classical pilasters as in the Henry Vassall and Brattle Houses. This scheme is commonly used in cunjunction with the raised or bolection panelling derived from English work of Wren's time, and the heavy bolection molding that frames the fireplace continues in use for this fashion. The richness and boldness of this woodwork os emphasized by the use of dar, rich paint colors in blues, greens, or greys and frequently in imitation of marble or wood graining. In lesser houses, panelling is reserved for the mantel wall with chair rails or wainscotting to chair rail height for the other walls.

Middle Georgian: 1750-1790

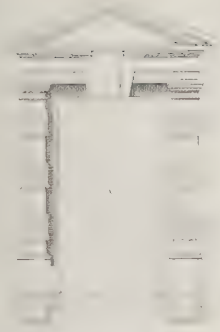
Early Georgian architecture had a rather naive freedom to it, an unself-consciousness. By the 1750's, however, Colonial builders were more concerned with the correct use of Classical ornament and with refinement of detail. Middle and Late Georgian building is marked by an academicism absent from the Wren-inspired and more baroque work of the Early Georgian builders. A major influence in this change was the work of the sixteenth century Italian architect, Andrea Palladio, whose bold scale and strict interpretation of the Classical orders were admired and imitated in England by a group of professional and dilettante architects who surrounded Lord Burlington. From England the Palladian enthusiasm was transferred to the American colonies in a somewhat simplified and corrupted form. In Cambridge there is not as sharp a break between the phases of Georgian styles as in England or in certain commercial centers in America. As an architectural movement works its way into the vernacular (the commonplace, every-day building), stylistic traditions tend to overlap and stylistic distinctions blur. We see this phenomenon here just as it was noted at the end of the seventeenth century and will be observed again in the nineteenth.

Cambridge has only one building designed by a major architect-builder in this period: Christ Church by Peter Harrison. In an age when there were few professional architects, Peter Harrison was a distinguished amateur. He owned an important architectural library and his buildings proved his knowledge of the academic Palladianism sponsored by Lord Burlington's group. Constructed for an Anglican congregation, Christ Church is built on the typical Anglican church plan with nave, side aisles, and a focus on the altar end as opposed to the square, compact, pulpit-centered scheme standard for New England dissenting meeting houses. The successful use of the Classical orders give the design a more cosmopolitan air than the contemporary Congregational Meeting House at Harvard Square erected in 1756 (burned in 1833).

Harvard Hall was designed in 1764 by Governor Francis Barnard, another of the typical dilettante architects of the period, and shows the trend to plainer wall surfaces but a more liberal use of such architectural accents as projecting bays, roof pediments, and cupolas. The larger scale of the fenestration and the greater amount of architectural embellishment of both Christ Church and Harvard Hall make them more recognizable as "public" buildings than were the earlier college or public edifices in Cambridge.

The finest private residences were undoubtedly the work of competent local master builders who utilized the details they found in the handsome books published by architects like James Gibbs, Colin Campbell and Abraham Swan. The many builder's handbooks, published somewhat later, soon became the chief means of exchanging architectural ideas. Some of the first and most popular were compiled by Batty Langley, another British designer, and the most literal copy in Cambridge of a plate from one of his books is the doorway of 1765 added to the earlier (1725) Read house at 55 Brattle Street.

18-19. CHRIST CHURCH, 1759. ARCHITECT, PETER HARRISON.



20. READ HOUSE, 55 BRATTLE ST., 1765.

21. BATTY LANGLEY, CITY AND COUNTRY BUILDER, 1740, PLATE 33.

22. LONGFELLOW HOUSE, 1759.

23. "ELMWOOD", c. 1766.

Middle Georgian houses are still essentially square and block-like, but they differ from earlier eighteenth century buildings in several ways. Although two story houses are the general rule, three story houses sometimes appear, and low hip roofs, often concealed behind Classical parapets, replace the prominent gambrel or hipped gable roofs typical of earlier buildings. Central projecting pavillions crowned with pediments, porticoes, and Palladian main doorways or windows are featured. Facades are sometimes divided into bays by giant pilasters and the Classical detail used is more correct and robust.

The important Middle Georgian residences in Cambridge are best known to the public through their historical and literary associations. Architecturally, they fall into two groups. One group includes the John Vassall (Longfellow) and the Apthorp houses of 1759 and 1760. Originally both were two stories high with a hip roof but the Apthorp dwelling was heightened. Both have giant Ionic pilasters at each end of the facade. The Fayerweather house (1760) and "Elmwood" (c. 1766), examples of the second type, are three stories high and have hip roofs. Both groups employ a central feature: a projecting pavilion capped by a pediment and framed by two-story pilasters on the Longfellow and Apthorp houses, a two-story, pedimented frontpiece for "Elmwood", and a one-story Ionic portico on the Fayerweather house. The Richard Lechmere (Riedesel) house of 1762 has been so remodeled as to merit little comment. In all these dwellings windows are larger in size and larger panes of glass are used. About the time of the Revolution, exterior window shutters began to be used. The earliest shutters were heavy looking, with narrow stiles and wide fixed louvres, and often they were installed on older houses. Usually painted green or chocolate brown, typical examples appear on the Hooper-Lee, Wadsworth, and Longfellow houses.

Though situated in Cambridge on Brattle Street (often referred to as Tory Row), most of these mansions were built by wealthy Boston families as summer homes, just as similar houses were erected in Brookline, Jamaica Plain or Roxbury. In a sense they exemplify the more progressive and "wordly" currents of Boston life. More characteristic of simpler Cambridge needs and tastes are the Read house (1725) at 55 Brattle Street, with its tight three-run stair, or the house of Jmes Monroe (the village blacksmith) about 1725, which used to stand near the corner of Mason and Brattle Streets but which has been removed to 8 Willard Street.

In plan the Middle Georgian house still keeps the four square rooms and the same central hallway. When the house is of brick, each of the four rooms has its own chimney built into the outside end walls, but the two chimney plan continues in use for wooden houses. Stairs still have carved and twisted balusters which often become very intricate

as evidenced by the double spiral newel in the Lowell house. Occasionally front and back stairs are placed back to back in the center hall, with an arched window or a door in the wall that separates them.

Interior finish hides the actual framing completely so that walls and ceilings are free from projections that interrupt Classic detailing. Paneling with bolection moldings used earlier tends to disappear, but the bolection molding that frames the actual fireplace opening continues to be used. In fact panelled walls and even the panelled dadoes are often replaced by completely plastered surfaces, with only door and window enframements and mantlepiece reserved for decorative treatment. The moldings and details used are robust and come from academic Classical sources.

Walls often break forward around the fireplace in the same manner as the central portion of the facade. Thus emphasized, the area around the fireplace could be ornamented in a variety of ways: by a two-story mantel using pilasters and a broken pediment as in the Longfellow house, by applied scrolls which are slightly Rococo in feeling, by carved consoles as in the Apthorp house, or by a single large panel surrounded by a molding that is crossetted at the corners -- all schemes introduced in this period to replace the panelled mantel wall of the Early Georgian period. The chimney breast is sometimes flanked by panelled elliptical recesses as in the Longfellow house or "Elmwood", or they are more simply treated as at the Apthorp house. Windows with deep seats and panelled shutters continue much as in the Early Georgian period. Interior woodwork is usually painted a lighter color than before, but white does not seem to have come into general use until after 1800. During the second half of the century wallpaper begins to be used. Known examples from Cambridge houses of the period have large prints of repeated arches and other Classical motifs or intertwining garlands of Baroque inspiration.

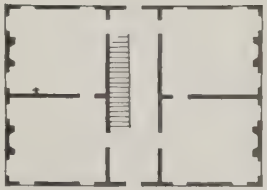
Late Georgian and Federal: 1790-1830

The Revolutionary War gave the American Colonies political independence from England, but architecturally the new nation still remained dependent on the mother country.

Although there was no radical break with the past, the solid Palladian academicism of pre-Revolutionary Georgian building gave way, after about 1790 to an increasing refinement and lightening of scale, delicacy of detail and a tendency to ring changes on both the old central hall four room plan and the basic square block of the house itself.

24. 8 WILLARD STREET, c. 1725

25. "ELMWOOD", STAIR.



26. PLAN OF TYPICAL EIGHTEENTH CENTURY HOUSE.

27. "ELMWOOD", DRAWING ROOM MANTEL.

This final phase of the Georgian style, which has come to be known in America as Federal, was strongly influenced by the English Adam brothers. Their work in turn reflected the impact of the discoveries at Pompeii and Spalato (Yugoslavia) and the influence of contemporary French building ideas.

The inherited square, hip roofed houses were still popular but such features as flanking wings, lower than the house, or wings connected to the main house by passageways came into more common use. A new roof type also appeared. Sometimes the upper part of a hip roof was raised by a narrow section of windows making what is known as a "monitor" roof, which allowed for an attractive square room in the center of the attic story.

Walls were flattened and blind arcades were often used as part of the decorative treatment. Windows tended to be larger and pane sizes also increased with six over six sash predominating. Fanlight doorways became enormously popular after about 1790 and elliptical fanlights and sidelights glazed in elaborated leaded patterns superseded the academic Palladian treatment for center door and second story windows; curving porticoes also appeared.

French inspired oval rooms with the curve expressed on the exterior in curved bays emphasized the break away from the simple square house type, and rooms designed for specific purposes broke up the symmetrical four room central hall plan. Stairs, sometimes set in a side hall, were apt to rise in graceful curves while the free-standing spiral staircase is a featured tour-de-force in some of the finest houses.

28. GORE MANSION, WALTHAM, 1805.

Probably the most significant characteristic of the Federal style is the delicate detailing of cornices, windows, doors and fireplaces. Such detail, like Georgian, was Classically inspired, but instead of being seen through Italian Renaissance and English Palladian eyes, it was derived more directly from Classical sources.

The Adam style reached America by way of architectural handbooks such as those published by James or William Pain. In addition, talented amateurs like Charles Bulfinch observed the new style while travelling in England and adopted some of its features directly. In 1797 Asher Benjamin of Greenfield, Massachusetts (later of Boston) published the first American architectural handbook, thoroughly English in derivation; other American handbooks followed but Benjamin's books were prime disseminators of the new style. American carpenters interpreted the Adamesque details with varying degrees of fidelity, extraordinary skill and imaginative ingenuity, using their ordinary tools to produce a wide range of simulated semi-classic or frankly invented detail. Some of the best Federal detailing was the most original, as in the work of the woodcarver-architect, Samuel McIntire of Salem, or the many remarkable country dwellings built during the early Republican period.

Cambridge has virtually no prototypical Federal mansions of the sort in which Portsmouth, Salem, or Providence abound. These large, four-square, three-story, brick houses with their low pitched roofs (often obscured by parapets) and their attenuated, refined detail, were built by sea captains and others engaged in prosperous mercantile endeavors. The same class in Boston patronized the architect Charles Bulfinch, whose three houses for Harrison Gray Otis are fine examples of the type. Because of the high cost of land in the city, most of Boston's Federal houses are of the row house type, best exemplified on Beacon Hill.

In Cambridge during the post-Revolutionary period there was not the same large class of men made wealthy by trade; what demand there was for mansions could largely be filled by the big Georgian houses vacated by the Tories. Thus the promoter Andrew Craigie, instead of building a Federal mansion, was able to purchase the Vassall estate on Brattle Street, later the home of the poet Longfellow. Moreover, some of the new houses built here in the Federal period retained strong Georgian characteristics. The Thomas Lee House at 153 Brattle Street, built in 1799, does not differ significantly from its earlier neighbors along Tory Row. Perhaps the fact that the house was built by Judge Joseph Lee, owner of the nearby Hooper-Lee (later Nichols) house (159 Brattle), accounts for the basic conservatism of the design.

A much more advanced design is that of Fay House at 10 Garden Street, built in 1807. Although considerably remodeled for use as

Radcliffe administrative offices, the typically Federal curved bay, a part of the original house, has been retained.

Most of Cambridge's Federal houses are on a smaller scale, a good example being the present rectory of Christ Church at 1 Garden Street, built about 1800. Three stories high, with the usual smaller windows for the third story and with a low-pitched, hip roof, it has a fanlight entrance door that leads into the central hall. Here one principal room on either side of the hall takes the place of the usual two in large Federal mansions. The chimneys are on the brick rear wall, and an ell projects out to the side. The orientation of this house with its narrow end to the street is not typical of the Federal period but the house itself is.

New areas of Cambridge began to develop in the post-Revolutionary period. Cambridgeport, which got its start with the opening of the West Boston Bridge in 1793, has a sizable number of Federal houses, the most elaborate of which is the Margaret Fuller Settlement House at 71 Cherry Street. In East Cambridge, where houses are all quite modest in size and conservative in style, Late Georgian house types and details appear as late as the 1830's and 40's. A good East Cambridge example of 1824 survives at 467 Cambridge Street, hidden behind a later block of stores.

Harvard buildings of the period include Holworthy Hall, built by Loammi Baldwin in 1812, and Charles Bulfinch's University Hall, built in 1813-15. University Hall is constructed of granite, a material much more universally used in the Greek Revival period; however, there is no mistaking the building's Federal date because the granite blocks are fairly small in scale (unlike the monolithic masonry of the Greek Revival period) and because the decorative details (such as the Corinthian pilasters on the exterior) are English Neo-Classical in derivation and have the characteristic Federal attenuated scale.

In many ways the Federal style bridged the gap between the Georgian and the Greek Revival. As the period progressed, there was an increasing classicism, not only in decorative detail (more archaeologically correct) but also in such characteristics as flatter, less ornamented wall surfaces and paler colors. Windows and window panes became larger; doorways acquired side and top lights. Projecting porches became common. Interiors were finished with plain plaster walls, not the elaborate paneling of the Georgian period; mantelpieces (now just one story in height) and cornices were the principal decorative features. Decoration in plaster as well as wood became common, a trend that was to continue as the nineteenth century progressed. Probably the only element of the Federal style that did not lead logically and distinctly to the Greek Revival was the delicacy, refinement, and attenuation of the detail.

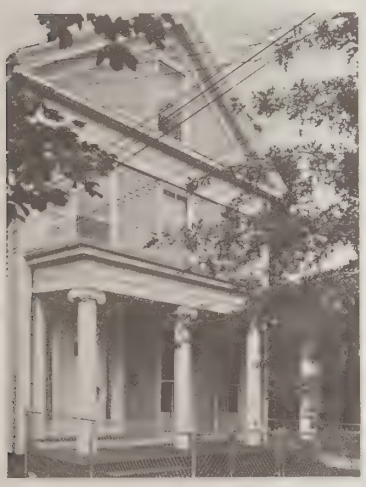
29. CHRIST CHURCH RECTORY, c. 1800.

30. UNIVERSITY HALL, HARVARD, 1813. ARCHITECT, CHARLES S. BULFINCH.

31. 467 CAMBRIDGE ST., 1824.

32. MARGARET FULLER SETTLEMENT HOUSE, 71 CHERRY ST., 1803.

33. 38 KIRKLAND ST., 1839.



34. 69 THORNDIKE ST., 1844.

35. 125 ANTRIM ST., c. 1843.

Greek Revival: 1830-1850

Interest in Classical archaeology, already an influence on the Federal style, became a controlling force in the Greek Revival movement. Following the discovery of Herculaneum (1719) and Pompeii (1738), a variety of publications began to document the art and architecture of the ancient Classical civilizations. The most important source of information for Greek Revival architecture in America was Stuart and Revett's Antiquities of Athens, the first volume of which was published in 1762. For the first time it was possible for the world to see exactly what the Classical buildings of Greece were like; no longer were Renaissance norms the only source. Stronger on the Continent than in England, it took some time for the new archaeological spirit to filter through to America and to affect the local architecture; the first manifestation of the new spirit was in the work of Jefferson and Latrobe in the South, towards the end of the century. New England, more closely tied to Britain, was conservative, and for a whole generation clung to the old Federal manner.

What finally sparked the Greek Revival in New England and all across America were the Greek Wars of Independence in the 1820's. The American people sympathized with the Greeks in their heroic fight, and a penchant for things Greek resulted. Buildings took the form of classical temples or at least sported heavy Greek-derived details -- columns or pilasters, entablatures, cornices, and the like. Probably the turn towards massiveness and solidity in ornamentation was also a natural reaction against the over refinement of the Adamesque Federal style.

In Cambridge the full-fledged Greek Revival is illustrated by the Joseph Lovering House at 38 Kirkland Street, built in 1839-40 by Oliver Hastings and Luther Brooks. In imitation of a Greek temple, the gable end of the house is turned to the street; four massive Ionic columns support the classical entablature and pediment (as well as an unclassical balcony at the second-story level). The Greek-inspired orientation and details do little to change the conventional use and arrangement of the house; the center-hall plan is much the same as in the preceding century, with only a bit more freedom in the size and shape of the rooms. The Lovering House is unusual in having a non-axial center entrance (pushed somewhat to the left to give more room to the important double parlor to the right) and in having the underside of the staircase face the entrance door in the front hall. Such variations, presaged in the Federal period, indicate the greater freedom in design which was to become characteristic of later nineteenth-century architecture.

The most ubiquitous Greek Revival house type, in Cambridge and indeed all over the country, was the three-bay, side hall type with its

narrow gable end to the street. The orientation aped that of a classical temple, as did the usual decorative emphasis: corner pilasters (in lieu of full-height columns), a heavy entablature, and a full cornice on the pedimented gable. Generally there was a porch (with Doric or Ionic columns and capitals), either just at the front door, across the entire front, or along the side. Examples of such side-hall Greek Revival houses in Cambridge include 69 Thorndike Street, 123 Antrim Street, 135 Western Aven;e, and 112 Brattle Street. There are scores of others in all parts of the city -- particularly in the eastern half, which received its primary growth in this period. Parts of East Cambridge are almost exclusively Greek Revival, giving a good feeling of what a neighborhood of the period was like.

Inside, the typical Greek Revival house had two parlors opening off the side stair hall. Generally the parlors were thrown together through a wide opening, which was either framed by free-standing columns (classically correct) or had a pair of sliding doors. Each parlor had a fireplace on the outside wall, with a Greek-detailed marble mantelpiece. The ceilings were high (with fairly heavy plaster cornices); the windows were large, often extending down to the floor (in which case the sash were triple-hung); there were inside shutters (folding back into reveals in the walls) as well as outside blinds; and the stairs generally had a spiral newel post at the bottom and a curved termination at the top of the run. Houses were nearly all painted white, in imitation of the supposed sparkling purity of classical temples. The Greek-derived detail was appropriately massive and heavy-scaled and was used with considerable variety and ingenuity. Builders' guides, now almost exclusively American, provided the models for the improvisations of local carpenters. The Greek spirit was quite universal: even Asher Benjamin, who had done so much to disseminate the Federal style, began to illustrate Greek forms after 1826. Other architects followed suit.

One interesting Greek Revival house type -- perhaps a regional variant -- is represented by the Jared Sparks House at 48 Quincy Street, built by Daniel Treadwell in 1838 and now occupied by the New Church Theological School. The house is a conventional center-hall type, with double parlors on either side of the wide hall and with a graceful curving staircase leading to the second story. Its principal Greek features are the marble mantelpieces on the interior and the wide pilasters on the two principal exterior facades. These pilasters are more than just substitutes for columns; the house is important enough to have imitated a temple more directly, had its builder wanted to (the roof, for example, is not a gable but a hip). Rather, the house is a unique, conservative type, related to Regency architecture in England. Its kinship with more orthodox Greek Revival buildings lies in the quality and scale of its ornamentation.

36. 112 BRATTLE ST., 1840–50.

37. 267 BROADWAY, 1840–1850.

38. 135 WESTERN AVE., BY 1835.

39. 69 THORNDIKE ST., DOUBLE PARLORS, 1844.

40. 48 QUINCY ST., 1838.

41. 48 QUINCY ST., STAIRS.

During the Greek Revival, buildings became increasingly individualistic and self-assertive. The typical placement of the single house with its narrow gable end to the street gave a jagged silhouette to the streetscape instead of contributing to a continuous corridor effect; each house vied for attention rather than modestly forming part of a group. The varieties within the individual house types were legion; the four examples of the standard side-hall type show what variation there could be in the placement of porches, cupolas, and the like. In addition, the number of other house types and combinations were considerably greater than in previous periods.

The Greek Revival began in Cambridge in the later 1830's, was most prevalent in the 40's, and lasted, in the case of vernacular examples, as late as the Civil War. The more important Greek Revival structures in the 50's were thoroughly Victorianized, as the Whittemore House at 329 Harvard Street shows. Built in 1850 on a center-hall plan, the house is Greek only in the source of its ornamentation. The console-supported balcony above the entrance, the two bay windows, the wooden siding rusticated to look like stone, and the cupola on the roof, are all characteristic of mid-century taste.

The Greek Revival, therefore, bridges the gap between the Federal and the Victorian styles. It takes over the standard house types of the preceding period, makes certain changes in arrangement and orientation, and applies a coating of simple, solid, more or less Greek-derived ornament. The greater variety of plan types and decorative possibilities, and the more assertive character of each individual building, point the way to the extreme individualism of the architecture of the later nineteenth century.

42. 329 HARVARD ST., 1850.

Victorian or Middle Nineteenth Century Styles

It is often observed that the Greek Revival was the last movement to assume the proportions of a unified style throughout the United States. By 1850, however, it was clearly on the wane, and a number of complementary but divergent architectural styles were to be seen. No single manner thereafter dominated in any one place or at any one time, but common to them all was a search for the picturesque and the expressive. Now to a much greater degree than before, each composition was animated by a certain assertiveness and each designer sought to impress his audience. The repertoire of solutions and decorative motifs was increasingly varied. Thus we find included under the general term "Victorian", architectural styles as varied as the Italianate or Bracketed, Mansard, Richardson Romanesque, Gothic Revival, Queen Anne, and the Colonial Revival.

If the specific architectural forms that were used differ widely in external configuration, they nevertheless share some fundamental similarities. In one form or another they all tend toward an active, assertive, individualistic mood. Each composition, even each element within the composition, seeks to be noticed separately. Rather than consisting of quiet, compact forms contained within a simple, rectilinear shape, the mass of the building becomes more plastic, its silhouette more active, its proportions more thrusting and vertical. With each decade, asymmetrical groupings with towers, wings, cupolas, and bay windows become more prominent. Even the profiles of moldings change to shapes that are fuller and rounder than the svelte, elegant shapes of earlier periods. Decorative forms project assertively from wall surfaces, and ornamentation becomes more intricate and full-bodied than before. Variety in building materials increases as new materials are fabricated by industry or materials (like brownstone) are transported by railroad from distant points. The new technology affects architecture in the use of machine-made rather than hand-carved ornamentation; the cheaper the cost of production becomes, the greater the quantities of ornament that are used. In ordinary residential construction, however, a heavy, wood stud type of construction was generally employed until the 1880's. This structural identity means that there is a basic similarity between wooden houses of different styles even though the external detailing is different.

One other important factor in American architecture of this period is the growing professionalism among architects. Architectural schools and professional architects set themselves up as the arbiters of good taste. To this end is the emphasis upon "correct detail", i.e., archaeologically accurate detail, and upon "up-to-dateness". As style consciousness develops, however, the old vernacular is undermined by the changes and opposing ideas of the contending styles. Thus it looses its equilibrium at the same time that the high standards of craftsmanship were being disrupted by machine techniques.

43. BRACKET, 21-23 FAYETTE ST.

The Italianate or Bracketed Style: 1845-1865

The Italianate or Bracketed style constitutes a numerous family whose geneaology is most confusing. The terms Italianate or Italian Villa are misleading for the style has almost nothing to do with the Renaissance in Italy. Instead it derives from Sir Charles Barry's Travelers Club in London (1830) and one of its first American representatives, the Boston Athenaeum designed in 1847 by E. C. Cabot. "Italian Villas" -- rambling and towered suburban houses of the 1840's, often built of brownstone -- constitute one of the most interesting chapters in American architectural history.

Frequently associated with this style is the bracket motif -- a form scarcely dreamed of by the Italian Renaissance, but one in which Yankee carpenters, working with jigsaws and lathes, discovered unlimited decorative possibilities. Though the Bracketed and Italianate manners merge indistinguishably, one might say that the more sophisticated the design, the less the use made of brackets.

If Cambridge has no outstanding Italian Villa (15 Berkely Street gives some idea of the form despite its later overlay of shingles), a number of good double houses are to be found. The best is 21-23 Fayette Street (1848). A forthright and boxy mass, its outstanding feature is a cornice of enormous overhang which tops the building and all but obscures a view of the low hip roof and the cupola. The cornice is supported by very large brackets, and the low attic windows are

44. 21-23 FAYETTE ST., 1848.

fitted within the entablature zone. The delicate cast iron balconies and grilles once found parallels in the Robert Fuller House (1847, destroyed 1937) on Prospect Street. Built of brick, it lacks the usual window and door frames with their robust moldings and ponderous cornices of wood or brownstone. Other characteristic features not found on this house are arched windows which are often grouped by two or three. Italian houses are generally provided with quoins which replace the Greek Revival pilaster strips; when the house is constructed of wood, the quoins are carved to imitate stone.

Within, the Italianate house differs hardly at all from late Greek Revival. The stair at 23 Fayette, with a scrolled newel and a graceful round turn at the top, duplicates the design found in all fine houses of the period. Excessive ceiling heights (eleven feet on the main floor) and heavy interior trim are also characteristic of the late forties. In deference, no doubt, to the increased efficiency that furnaces achieved about this time, 23 Fayette Street was built without fireplaces although non-functioning marble mantles were added later, probably in 1869.

Outside of residential construction, the Italianate style was more popular for public and commercial buildings than churches. Representative are Lawrence Hall at Harvard (1851) and the old Cambridge Athenaeum (later the Public Library), built in 1851 on the south corner of Massachusetts Avenue and Pleasant Street (across from the present post office) but since demolished to make way for a characterless, one-story store.

45. ROBERT FULLER HOUSE, 1847, DESTROYED.

47. CAMBRIDGE ATHENAEUM, 1851, DESTROYED.

46. LAWRENCE HALL, HARVARD, 1851.

48. ITALIANATE WINDOW, 1665 MASS. AVE.

American builders grew so attached to the bracket that they continued to use it well into the 1890's, long after the Italian Villa had been forgotten. Beginning as large and naturalistic forms, brackets by 1870 had become elaborate compendiums of ornamentation built from machine-made components. Produced in quantity, the same bracket is found in many parts of the city. Still later, brackets become small in size, lack full-bodied strength, and follow straighter, more mechanical lines.

The Medieval Styles: Gothic and Romanesque Revivals

The morphology of the Medieval Revival movement in nineteenth century America is complicated by two factors: one, the wide variety of European prototypes -- buildings from over 500 years of building activity in all parts of Europe -- and secondly, the fact that in America the movement extends over a full century (rather than the 15 to 20 years of the other styles) during which time changes occurred in taste and in the economic ability to construct ambitious monuments. At the outset, between 1830 and 1850, the Medieval Revival divided into two principal branches -- Gothic and Romanesque -- but as time went on and archaeological distinctions became more important, more Medieval types were copied.

The Medieval Revival occupies a somewhat unusual position in nineteenth century America. Whereas other architectural styles are generally restricted chronologically to a certain span of years (Greek Revival to 1830-50), Italianate to 1840-60, etc.), the Medieval style ranges over a full century, from 1830 to 1930. To an age that debated the merits of architecture in moral and ideological terms, Medieval forms were particularly appealing for churches, seminaries, and the like. Also the unsymmetrical, unpredictable massing, the rich detailing, and the picturesque rural setting of Medieval residences recommended themselves to homebuilders' fancies if not to their pocketbooks. Because of its greater economic demands, the Medieval manner was generally limited to large country homes, of which a group of five stone houses built just across the Cottage Farm Bridge from Cambridge in Brookline about 1850 are splendid examples. A Gothic cottage on a modest scale was harder to achieve although it was successfully attempted on a moderate scale at 85 Brattle Street (1847).

The difference between Gothic and Romanesque architecture during the early nineteenth century in America was largely nominal: one had pointed arches, the other round ones. Thus the wooden First Parish church (1833) is Gothic while the brick Prospect Street Con-

gregational Church (1851) is Romanesque. The fundamental structural and spatial differences between the two manners as they developed in the Middle Ages were quite unknown to American builders of the period. Neither church building is anything more than a traditional, rectangular New England meeting house dressed up with "foreign" architectural shapes. At this stage in his development the Yankee architect was as uninformed on the subject of Medieval architecture as were his British cousins a few generations earlier when, thinking of Gothic only as so much trimming, Battey Langley had designed a "Gothick Order" to assist British builders in the 1740's.

As the century wore on, a larger knowledge of Medieval architecture developed, a fact that can readily be seen by comparing the wooden First Parish church with the 1867 stone chapel for the Episcopal Theological School on Brattle Street. As structural statements the window tracery and spur buttresses on the First Parish church (both made of wood) are an absurdity -- but a rather delightful one that is also called "Gothick" to connote its naive story book quality. (The church's steeple has been shorn of much of its original wooden decoration). The chapel, on the other hand, is the work of men who knew Medieval architectural theory. (Henry Van Brunt, one of the designers, translated Viollet-le-Duc). In fact, the chapel is a reasonably successful attempt to recreate a fourteenth century English village church on Brattle Street. The touches of brown and cream stone polychromy, however, recall the theories that John Ruskin had disseminated in the 1850's and thus reflect a point of view that is distinctly Victorian.

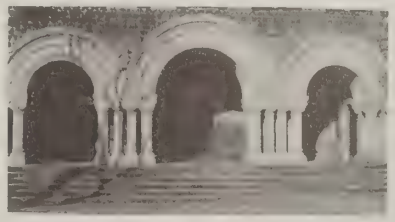
Only with H. H. Richardson did the Romanesque style become a viable movement in America. Two of his greatest buildings were constructed for Harvard: Sever Hall (1878) and Austin Hall (1881). Less preoccupied with archaeological trim, Richardson admired the formidable strength, the splendid use of material, the massiveness of Romanesque buildings, and it was to attain these qualities that he used large rough blocks of quarry-faced stone and the low, broad arches. How successfully he could adapt his design to fit his material can be seen by comparing the exquisite brick detailing of Sever with the rugged stone surfaces of Austin Hall.

Though not designed by Richardson, Cambridge has two other good Romanesque buildings. The City Hall of 1889 by Longfellow, Alden and Harlow has a clarity of mass and feeling for material that is worthy of H. H. Richardson. The design of the Cambridge Public Library (Van Brunt and Howe, 1888), as is often the case among Richardson followers, sacrifices monumentality to picturesqueness and ingratiating detail.

One additional example extends the scope of our comparison of various phases of the Medieval Revival to the twentieth century. The

49. FIRST PARISH CHURCH, 1833

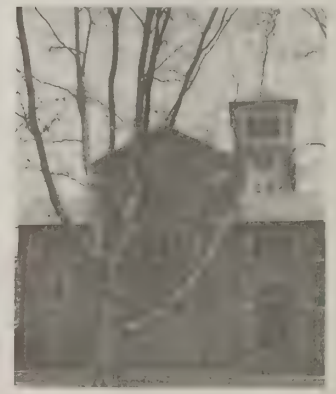
50. EPISCOPAL THEOLOGICAL SCHOOL, CHAPEL, 1867. ARCHITECTS, WARE AND VAN BRUNT.



51. AUSTIN HALL, HARVARD, 1885. ARCHITECT, H. H. RICHARDSON.

52. PROSPECT ST. CHURCH, 1851.

53. CHAPEL OF MONASTERY OF ST. MARY AND JOHN, MEMORIAL DRIVE, 1935. ARCHITECTS, CRAM AND FERGUSON.



chapel of the Monastery of St. Mary and St. John (Cram and Ferguson, 1935) on Memorial Drive is so accurate a duplication of a French twelfth century Romanesque structure that the visitor may almost wonder if the edifice has been moved bodily from Burgundy to the Charles River Embankment. This sequence of Cambridge buildings extends over a century of time and illustrates the increasing archaeological character of Medieval Revival architecture in America. It demonstrates also the increased wealth of the country by the change from a simple wooden to a stone construction replete with quantities of carved ornamentation.

When building houses, the architect was more restricted by practical and budgetary considerations in the uses he could make of Medieval forms. Hence the Gothic quality was generally limited to a few exotic details that could be buttered onto the usual wood frame construction. 85 Brattle Street is a text book example of what most Americans in 1847 supposed a Tudor Cottage to be. With heavy drip moldings around the windows, buttresses and "coursed masonry"--all constructed of wood, it is a charming stage prop for a performance of "Ruddigore". One loves and indulges such buildings. Toward the century's end, when travel and better reference libraries had made possible more plausible Gothic designs, several Tudor mansions were built along Brattle Street, the handsomest of these, built in 1892, at 128 Brattle. The carved barge boards, the elaborate half-timber work, and the leaded windows are closer to medieval prototypes, yet the house retains certain Queen Anne qualities in its plan and in the use of exterior shingles.

54. 85 BRATTLE ST., 1847.

55. 128 BRATTLE ST., 1892.

56. CAMBRIDGE PUBLIC LIBRARY, 1888. ARCHITECTS, VAN BRUNT AND HOWE.

French Academic or Mansard Style: 1855-75

The prestige of French architecture was very great in the mid-nineteenth century. Travellers were impressed by the splendid boulevards that were being built in Paris, and American students were beginning to go to Paris to study architecture. Expensive buildings like the Boston City Hall (1861) and the brownstone residences in the Back Bay district illustrate one of America's most successful attempts to copy the current Academic French manner. By the time the style worked down to the suburban cottage, however, about all that was left of the prototype was the mansard roof. The term Mansard style, therefore, is perhaps the most descriptive term.

In ambitious designs the composition is usually symmetrical, with a projecting pavilion placed on center axis or used as end bays. The proportions of the building are more vertical than in Greek Revival times, a fact that is exaggerated by the high roof. The lower slope of the mansard roof is covered with slate, often of contrasting colors and set in patterns.

In addition to the fashion for things French, there was a practical reason for the popularity of the mansard roof. By rendering attic rooms fully usable (because of the additional head room), the number of stories in the main body of the house could be reduced.

In a correct French style house, as the Ross residence (1869), Craigie and Brattle Streets, ornamentation is used with academic propriety. It is restricted to areas of critical importance like window and door frames, corners, cornice, and foundation. And though this ornamentation is not requisite to the structural stability of the building, it does recall a structural function; it is architectonic ornamentation. In such representative work, the detailing follows correct Classical forms, and Italianate brackets, which had no Classical precedent, are eliminated. When constructed of wood, the surface of the facade is scored to suggest stone masonry. Each of the three major facades of the Ross house is rigorously symmetrical, and its mansard roof has elaborate dormer windows.

Within the Mansard house, the high-ceilinged rooms are capped by heavy plaster cornices which are broken at frequent intervals by chimney breasts and bay windows. By the 1860's the fireplace again is fashionable in Cambridge, not so much to provide warmth, it would seem, but as a decorative feature.

In every-day building French-inspired design is not so disciplined as in the Ross mansion. As one turns from the work of professional architects to the broader current of vernacular building, precise differences between styles begin to blur and features from different

styles are often combined in the same building. Here, too, the designer is less correct in his Classical detailing, and ornamentation is employed more to enrich surfaces than to emphasize architectonic function. 1627 Massachusetts Avenue (1862) is a handsome and beautifully preserved example that attempts to incorporate features of two styles in one design; the robust brackets, the paired, round-headed windows, and the inventive window frames of the Bracketed manner combine with the French roof. The flaring profile of the roof on this house represents a not-infrequent variation of the usual mansard.

The Mansard cottage at 33 Linnaean Street (1870) represents a suburban house type that was repeated by the dozens -- usually on a somewhat smaller scale. The appearance of the building is misleading for it looks like a one-story structure; the mansard roof, however, allows adequate head room on the upper floor and results in a full two-story house. Such practical advantages made this manner very popular with speculative builders of the 1870's as side streets in many parts of Cambridge demonstrate.

It is interesting to watch the Mansard style as it gradually merges with the Queen Anne in the late 1870's. The massing becomes more assertive and the silhouette is broken by towers and by iron cresting. Facade ornament becomes freer and more individualistic and at times almost approaches the articulated wooden surfaces that became popular in Queen Anne designs.

57. 24 CRAIGIE ST., 1869.

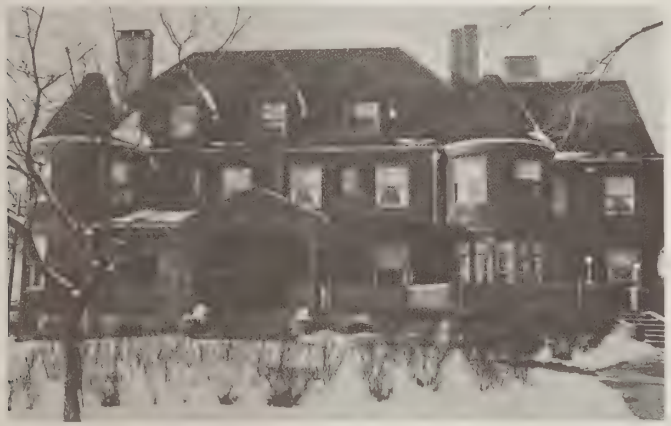
58. 1627 MASS. AVE., 1862.

59. 33 LINNAEAN ST., 1876.

60. 37 ARLINGTON ST., c. 1875.

61. 167 BRATTLE ST., 1883. ARCHITECT, HENRY VAN BRUNT.

62. 31 LANCASTER ST., 1887. ARCHITECTS, HARWELL AND RICHARDSON.



Queen Anne Style

Despite the architectural value and the romantic lustre cast by its pre-Revolutionary mansions, Brattle Street is basically of late nineteenth century construction and therefore largely Queen Anne in style. Of the 52 houses standing between Mason and Elmwood Avenue, 22 are Queen Anne. Old enough to have been discarded, but not old enough to be rediscovered, the Queen Anne has been in eclipse for the last fifty years. Now in the 1960's, however, "she" stands on the threshold of reevaluation. Some day people will go to Brattle Street especially to see her.

As with the Italianate style, we are again faced with misleading terminology. The term Queen Anne has many connotations, almost none of which have to do with the good English Queen who died in 1714. Instead, the philosophy and name derive from a group of rebellious young English architects working in the 1860's and 70's. The ideas and some of their decorative devices were introduced to the United States in the middle 1870's by H. H. Richardson and the firm of McKim, Mead and White. From the outset, the new manner was very popular in the Boston area.

The thing that makes the Queen Anne movement hard to grasp at first is that it is not a style but a philosophy of architecture. Convinced that rules of composition and archaeological detail were stifling, each designer sought his own particular expression. Thus there is great variety in the shapes and effects that we call Queen Anne. Architects of this persuasion felt much closer to the informality of the Middle Ages than to the symmetry and formulas of the Renaissance, and they had a passion for sound craftsmanship and truthful expression of material. In England the earliest versions of Queen Anne (1860's) are strongly Medieval in character; in the seventies brick designs are prevalent, while the eighties show a decided preference for Renaissance detail. After 1890 Queen Anne work merges with the Neo-Georgian movement.

In the United States, the most successful Queen Anne work (and that which least directly depended on English prototypes) was the rambling country house of the 1880's. Ample and informal and for the most part built of wood -- a material that was used with great variety and imagination -- these houses were beautifully suited to the life of the wealthy class of that era.

A good example of early Queen Anne is the house at 167 Brattle Street built in 1883 by the architect Henry Van Brunt as his own home. The studied asymmetry, the picturesque and irregular silhouette, the variety of building materials, and the extensive use of hand

labor -- illustrate the components of the style. The main failure of the movement, as evidenced here to some extent, was the attempt to incorporate too many decorative features into a single design -- a lesson that some architects still have not learned.

31 Lancaster Street (1887) by Hartwell and Richardson (no relation of H. H. Richardson), a more coherent design than Van Brunt's house, illustrates the magnificent use of shingles of which this period was capable. The flow of the sheathing of shingled surface is suggestive of the light, flexible wood framed construction. The exact symmetry of the facade is less typical of a period that generally sought the picturesque, but the spacious hospitality of the interior is expressed on the exterior. The exceptionally fine carriage house, also of shingles, is picturesque without descending to frivolity. A more famous example of a shingled Queen Anne suburban house is the Stoughton house at Brattle and Ash Streets, built in 1882 by H. H. Richardson. Remodeled and difficult to photograph, it is such a well-known landmark in American architecture that it seems unnecessary to describe it further here.

The intricate mass and asymmetrical facade organization of 19 Francis Avenue (1889) is irrepressibly picturesque and Queen Anne; so too, the complex gables, active dormers, the variety of window shapes and sizes, the unexpected placement and design of various elements of decoration, and the soaring though half-hidden chimneys. The increased use of Colonial detail, however, shows this came late in the Queen Anne movement (The 1893 Columbian Exposition in Chicago was a general signal in America to return to classic-inspired models though the process had begun somewhat earlier in Boston.). The panels of elaborate relief decoration are cast of a patented mastic material. This illustrates the movement's tendency to substitute machine-made products for hand-made ones under the banner of craftsmanship.

The last stage of the Queen Anne style in America, as it moved closer to and finally merged with the Colonial Revival, is illustrated by 115 Brattle Street (1887). The symmetry and many exterior and interior details almost suggest an eighteenth-century house, but the over-sized gambrel roof, the grouping of windows, the picturesque second-floor balcony, and dramatic stair composition betray its date. The fact that American designers at the time were beginning to turn back to pre-Revolutionary models for inspiration is beautifully demonstrated by comparing this house with the Longfellow house two doors down Brattle Street built in 1759. The comparison is nicely underlined by the fact that 115 Brattle was built for Longfellow's daughter, Annie, and was designed by his nephew, Ernest W. Longfellow.

63. 19 FRANCIS AVE., 1889.

64. 115 BRATTLE ST., 1887. ARCHITECT, ERNEST W. LONGFELLOW.

65. 22 FAYERWEATHER ST., 1898.

66. "ELMWOOD", c. 1766.

The Colonial Revival

In the course of ransacking the whole of western architectural history for inspiration and for concrete solutions which they might incorporate in their own buildings, American architects of the late nineteenth century stumbled upon the work of their own ancestors and so began to take an interest in it. As early as 1880 there were clear signs of a renewed appreciation for this work. The house at 115 Brattle Street just mentioned illustrates the respect accorded the old tradition. By 1890 a full scale Colonial Revival, known more accurately as the Georgian Revival, was under way. It was strongest in New England where so many fine examples of Georgian building survived to guide the designer. In addition to this, the example of the English Queen Anne architects was also leading the way to a renewed interest in the eighteenth century. At this time, too, Boston was being out-distanced by New York in the race for economic leadership of the country, and one may be correct in saying that Boston began to feel more comfortable contemplating her illustrious past than in looking to the future. It was only a small step from Longfellow's daughter's house (115 Brattle Street) to a direct copy of a Colonial dwelling as an examination of 142 Brattle Street (1939) or 22 Fayerweather Street (1898) prove. One has to look twice to determine whether or not these houses are pre-Revolutionary. The entrance of the latter is clearly inspired by "Elmwood". The most spectacular examples of the Georgian Revival, however, are the many buildings designed prior to 1940 for Harvard University by Shepley, Coolidge, Bulfinch and Abbott: the Houses along the River, Appleton Chapel, the freshmen dormitories in the Yard. Houghton Rare Book Library, built by Perry, Shaw and Hepburn in 1942, is in all probability the last "authentic" Georgian Revival building that the University will build.

The Period Revivals: 1910-1929

A natural corollary to the interest in American Colonial work was a whole series of parallel revivals of different periods of history: Medieval English, Dutch Colonial, Georgian, French Provincial, Mediterranean, etc. A good example of Medieval inspiration (in the twenties popularly termed the "English style") is the dwelling at 41 Fresh Pond Lane (1920). Although architects by this time had enough information to reproduce archaeologically perfect replicas, as the Cowley Fathers' chapel on the Embankment proves, they were generally too practical to build a completely authentic Medieval house. Most "English style" dwellings in the vernacular were little more than wood frame boxes with a brick veneer and some "half timber" facing applied to the facade (57 Fresh Pond Lane, 1924).

The so-called Dutch Colonial style (72 Fresh Pond Parkway, 1916) was popular in the early twenties for the same reason the Mansard house had been popular half a century earlier: it allowed more head room under the roof. Now, however, the space conserved is on the second floor level, not in the attic. (Houses were beginning to get smaller, though they were still a good deal more spacious than those of the 1950's). On the other hand, no matter how Dutch Colonial might vary on the outside from "ordinary" Colonial (by this term people of the 1920's usually meant Georgian Revival), the interiors would most likely have been identical. For as always in the vernacular, "style" is a matter of applied details.

67. 41 FRESH POND LANE, 1920.

Houses with a hipped slate roof were apt to be typed "Norman" or "French". An unusually pleasant and well-sited example of this occurs at 18 Scott Street (1928). Somewhat inappropriately, Cambridge even indulged in a timid attempt at a tile-roofed Mediterranean house in 1927 at 40 Larch Road. But by 1925 building space was running short. With the subdivision in 1915 of "Larchwood", the old John Gray estate, Cambridge was almost full. For a complete index of the Period Revivals, one has to go to suburbs like Belmont Hill or Wellesley Hills.

68. 72 FRESH POND PARKWAY, 1916.

69. 18 SCOTT ST., 1928.

70. 4 BUCKINGHAM ST., 1939. ARCHITECTS, CARL KOCH AND EDWARD STONE.

71. BAKER HOUSE, M.I.T., 1947. ARCHITECT, ALVAR AALTO.

Contemporary Architecture

Despite high land occupancy after 1930, Cambridge has a substantial number of modern buildings, due primarily to the presence and influence of design-conscious Harvard and M.I.T. For the past fifteen years the universities themselves have been patrons of modern architecture; before that, it was individuals connected with the two architectural schools who brought contemporary design to the city.

One of the early monuments of the modern movement was the Koch house at 4 Buckingham Street, built in 1939. This house, designed by Carl Koch and Edward D. Stone, was conceived in terms of function, efficiency, and liveability rather than in terms of applied ornament or derivative systems of proportion. The house is especially successful in dealing with the problem of privacy on a small lot; the principal living areas open onto a walled garden, while the remaining rooms have high, horizontal strip windows. The Philip Johnson house at 9 Ash Street, built in 1940, is based on similar principles; the house itself is all but invisible behind a ten-foot fence.

In the postwar period both Harvard and M.I.T. began to think in terms of modern design. The first manifestations of the new spirit, Alvar Aalto's Baker House at M.I.T. (1947) and Walter Gropius's Graduate Center at Harvard (1949), are considerably different from each other,

72. GRADUATE CENTER, HARVARD, 1949. ARCHITECT, WALTER GROPIUS.

yet each is forthrightly untraditional. In succeeding years the range of contemporary architecture at the two universities has been kaleidoscopic, giving Cambridge far more than her share of important modern buildings. Outstanding examples include Eero Saarinen's Kresge Auditorium (1954) and I. M. Pei's Earth Sciences Building (1963) at M.I.T., Le Corbusier's Visual Arts Center (1962) and Jose Luis Sert's Peabody Terrace (1963) at Harvard.

Cambridge has not had land enough for large-scale modern developments, but individual houses of contemporary design have cropped up in a variety of locations, mostly near Brattle Street. Especially notable for its siting is the group of modern houses (1950) on Hemlock Road, a cul-de-sac off Sparks Street. The present trend seems to be for unmanageably large nineteenth-century houses to be torn down and replaced by expensive modern ones; an enclave is growing on this basis near the corner of Highland and Reservoir Streets. The recent demolition of the huge Marquand house at Reservoir and Fayerweather has freed one more piece of land -- among the most desirable in Cambridge -- for modern construction. Of necessity, most future building in Cambridge will have to involve demolition of existing structures; if buildings are demolished with an eye to historic preservation, and if the vast array of architectural talent in the city is brought to bear on the new projects, the future of architecture in Cambridge will be as lively and interesting as the past.

73. KRESGE AUDITORIUM, M.I.T., 1954. ARCHITECT, EERO SAARINEN.

74. VISUAL ARTS CENTER, HARVARD, 1962. ARCHITECT, LE CORBUSIER.

75. GRADUATE STUDENT COMPLEX, HARVARD, 1963. ARCHITECTS, SERT, JACKSON, GOURLEY.

VIEW OF

EAST CAMBRIDGE, MASS.

PART TWO: THE BACKGROUND OF EAST CAMBRIDGE

17th and 18th Centuries

East Cambridge was the site of the town's first building. It was a house built for the use of the Charlestown surveyor Thomas Graves who came from England in 1629 to Salem as an employee of the Massachusetts Bay Company. Under his agreement with the Company, Mr. Graves was to receive fifty pounds a year and have a house and one hundred acres of land assigned to him and "to have part thereof planted at the Company's charge." The one hundred acres of land was located in the area that has variously been called Graves Neck, Lechmere's Point, and East Cambridge. The house, of which no description is known, is said to have stood until 1820 on the northerly side of what is now Spring Street between Third and Fourth.

According to the first Register Books of Newtowne (Cambridge), the land and house became the property of the Atherton Haugh in 1635. He purchased more land until in 1642 he owned about three hundred acres. In 1699 the widow of his grandson sold it to John Langdon who in turn sold it in 1706 to Spencer Phipps, later Lieutenant Governor of Massachusetts. A daughter of Phipps married Richard Lechmere, who, on the death of his father-in-law in 1757, bought out the other heirs and so became owner of what was long known as Lechmere's Point.

The land on which Graves' house was built was entirely surrounded by a marsh which was covered at high tide by water. It could be reached from the Watertown-Charlestown road, itself an old Indian trail, by a causeway across the march (approximately the route followed by Gore Street today). There were also some roads through the marsh over which wagons took "good salt hay" to another and later house which stood on the western half of the property at what is now Plymouth Street. This was the so-called Boardman house from which the western half of the 300 acre estate was farmed.

The road and causeway across Willis' Creek played an important part in the movement of British troops in 1775 when they followed it on their route from Boston to Lexington. The strategic value of the sixty-five foot hill on which the Graves house stood was quickly recognized by the Revolutionary patriots. The fort built there by Generals Washington and Putnam was considered most important in forcing the British evacuation of Boston later in the year.

Indeed, a realization of the locational advantages of East Cambridge is a necessary preliminary to understanding what transpired there, from the early bridge building down to the latest expansion in manufacturing and research in that area. For 170 years, however, the proximity to Boston of Cambridge was nullified by lack of easy access to that city. Oriented towards the agricultural hinterlands by similar interests, Cambridge had only a most indirect connection with Boston. This was either the long, round-about route via the "Great Bridge" and through Harvard Square and Allston or along the Watertown-Charlestown road to the Charlestown-Boston Ferry. Before 1800 East Cambridge was merely on the outskirts of a quiet little farming village around Harvard College. In 1790 there were only slightly more than 2000 inhabitants in all Cambridge which at that time included Brighton and Arlington. To the east of Dana Hill (Dana St.) there were only four houses.

Early Bridge Building

As early as 1738, several petitions had been made to the General Court for permission to construct a bridge from Boston to Lechmere Point, but no action resulted. In 1785, a committee of Cambridge citizens was appointed to support the petition for a bridge to Boston from Pelham's Island (near the corner of Main and Massachusetts Avenue) in opposition to Charlestown interests who were also petitioning for a bridge from their side to be under their control and for their profit. (Called the Charles River Bridge, this bridge to Charlestown was built in 1786, and it became the first bridge to connect Boston with neighboring shores). Nearly a decade later, late eighteenth century prosperity and the rapid growth of Boston led Judge Francis Dana and his profit-minded associates to take an interest in developing the land to the north of Pelham's Island. (This took place at the same time Beacon Hill was being developed.) To this end Dana and his friends were incorporated as the proprietors of the West Boston Bridge and in 1793 built the bridge on which their plans depended. In 1805, the United States Government declared Cambridgeport an official port of entry.

After 160 years with no direct connection with Boston, the new bridge put Cambridge, and especially Cambridgeport, on the path of the burgeoning commerce between agricultural Western Massachusetts and the city. Cambridgeport became a feasible location, not only as a stop-over point and a shallow water port but as a reasonable location for manufacturing establishments and suburban homes.

The advantages of East Cambridge for similar development and profit were quickly appreciated by former Apothecary General Andrew Craigie. He saw that the most direct route to Boston lay by way of Lechmere Point, and he decided to initiate a rival enterprise. In order to avoid open competition and protect his investment, Craigie commenced in 1795 secretly to buy up the land in East Cambridge. His systematic piece-by-piece purchase of the property was carried out without his name appearing on a deed until 1803, and purchases

from the Cabot, Parkmen, Foster, and Wyeth estates were carried out unknown to his real estate rivals to the southwest. In 1807, after adjusting the reversionary rights of the Tory Lechmere, Craigie owned 300 acres from Lechmere Point to beyond what is now Inman Square.

The Lechmere Point Corporation

In February 1807, the General Court granted Craigie and his fellow speculators, most of whom were also members of the Middlesex Canal Corporation, permission to incorporate and the right to build a bridge, the Canal or Craigie Bridge. It went from Barton's Point (bottom of Leverett Street) in Boston to Lechmere's Point. The Lechmere Point Corporation received a 70 year charter with toll rights from which Harvard College was to receive a certain annual payment (as was the case for the West Boston Bridge as well). The corporation was also given permission to develop its land.

General Craigie realized a quick initial profit from his investment. His original purchases had cost around $20,000. Now augumented as it was by the existence of the Canal Bridge, Craigie gauged the worth of his 300 acres at $360,000. He placed sixty shares in the Lechmere Point Corporation on the market at $6,000 apiece. 10 shares were bought by Governor Christopher Gore and 3 by Harrison Gray Otis, then president of the Massachusetts Senate. Several others were taken up by prominent Boston merchants and investors who, like Gore and Otis, were also active in Boston real estate speculation. The Lechmere Point Corporation had its land surveyed and laid out in streets and lots for sale to the general public. The original street grid remains today much as it was laid out in 1811 by the surveyor Peter Tufts of Cambridgeport. Rules were established that all large buildings must be constructed of brick or stone. The Corporation had ambitious plans for its real estate venture.

Early Economic Growth

But lot sales in East Cambridge were slow during the first three years of the corporation's existence. A brewhouse, a hotel, stables and a blacksmith shop were built on the bridge's approach for the convenience of travelers. Then in 1813, while the commercial ambitions of Cambridgeport were being stifled by the Embargo and War of 1812, two astute moves on the part of Craigie and his associates assured the success of East Cambridge. The Lechmere Point Corporation offered to donate land as well as much-needed buildings if Middlesex County would move the seat of its court house, jail and registry of deeds to East Cambridge. Over the vigorous protest of Old Cambridge and Cambridgeport, the court and records were removed from Harvard Square to their present location on Third Street. For the total cost of $24,000 the Lechmere Point Corporation drew this permanent source of activity to its land.

At the same time, Craigie managed to persuade the Boston Porcelain and Glass Company to locate in East Cambridge. This was the first major industry in Cambridge and marked the industrial beginnings of Cambridge as a whole as well as the economic success of the Lechmere Point Corporation. By 1818, the forty glass workers had settled near the plant on Bridge and Gore Streets while lawyers, clerks, officials, and prison officers began to move into newly constructed residences around the new county buildings. East Cambridge thus attracted the means of sustaining itself without dependence on commuting or outside interest. Unlike many other metropolitan areas it was not to become a dormitory suburb of Boston.

The removal of the county buildings to East Cambridge was a strong factor in the rivalry between the three villages that made up Cambridge, a conflict that reached its maximum intensity over the building of approaches to the rival bridges. When Craigie had completed his land purchases in 1809 and was ready to bring his holdings to the market, build the bridge and incorporate, competition developed between his associates on the one hand and the proprietors of the West Boston Bridge and Cambridgeport landowners on the other. Each party wished to channel the flow of traffic to Boston from the country via its toll bridge and property. Each opposed attempts by the other to win public approval for the proposed routes. The two severest contests developed around Cambridge Street and the western approaches of Mt. Auburn Street to Harvard Square. Eventually each side got its way when both Brattle and Mt. Auburn Streets, which came from Watertown, were extended -- Mt. Auburn prolonged to the east until it met Main Street (now Mass. Avenue) and so connected with the West Boston Bridge, and Brattle Street extended by way of Craigie Street until it connected with Cambridge Street and thence with Canal Bridge. Cambridge Street was built by the Lechmere Point Corporation in 1809 except for an eighth-mile stretch of land belonging to Cambridgeport interests who gave right of way only when forced to do so by the courts.

The Lechmere Point Corporation faced other difficulties in getting its investment on a healthy footing. Just as it was ready to put its land on the market, it was faced with great competition. The Embargo of 1807, by diverting capital from shipping into real estate speculation, caused considerable over-expansion in Greater Boston. The financial debacle in Cambridgeport, caused by futile dock and canal building, had a further paralyzing effect on real estate values. It was to be a long time before the Corporation prospered. Andrew Craigie himself was on the verge of bankruptcy when he died in 1829. In 1816, to help speed the sale of lands in East Cambridge and to take tolls away from the West Boston Bridge, the Lechmere Point Corporation offered free passage to all who owned Lechmere Point Corporation land "except heavy loaded sleighs or wagons". This arrangement was soon found subject to much abuse and two years

later was repealed "except to those houses which said privilege has already been attached." By this time, however, such an inducement to settle in the community was no longer necessary, for by 1818, the establishment of a school and the church in East Cambridge was indication that the community was beginning to achieve a solid footing.

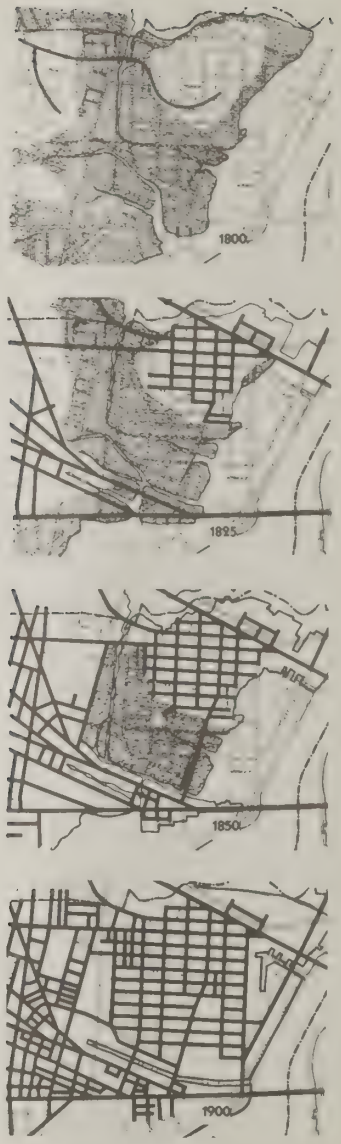
1825-1860

During the 'twenties and 'thirties the future of East Cambridge seemed somewhat unclear because the community was so evenly balanced in its population and its economic interests. Factory workers clustered near their places of employment in their trim Late Georgian cottages built by local carpenters. These houses, which lined Winter, Gore, Bridge and parts of Cambridge Streets, still survive in the most northern section of the neighborhood. The county buildings were the center of another occupational group -- administrators, clerks, lawyers, and prison officials. South Third Street, long known as "Quality Row" was heavily peopled by this group. Further along Putnam Hill, on Thorndike and Otis Streets near Second and Third lived the local gentry -- business men, wholesale and retail merchants, grocers, and others who owned their own establishments in East Cambridge as well as many of the local professional people.

Aside from the industry in the area, the presence of the county buildings, and its attractiveness as a residential area, East Cambridge activity centered on the life that passed through it on the way to Boston. The Mansion and Lechmere Houses on Cambridge Street near the Bridge were spots where farmers gathered on their way from market. Cattle, hogs, turkeys, and sheep were driven through East Cambridge. This brought important business to local black-

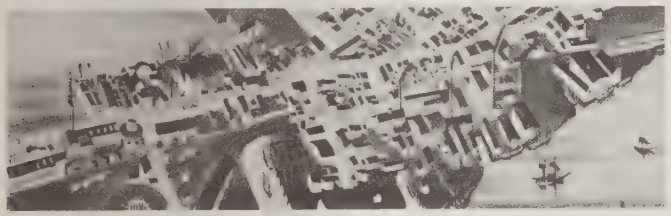
77. EAST CAMBRIDGE IN 1839.

78. DEVELOPMENT OF EAST CAMBRIDGE STREETS, 1800-1900.



smiths, harness-makers, and livery stables as well. In 1840 there were five blacksmith shops on Cambridge and Bridge Streets.

But the balance in the community economic interests was not long to remain. East Cambridge land was too valuable for industrial purposes. As early as 1825, the population had passed the thousand mark, chiefly by drawing workers off back-country farms to the factories. Three new churches and a second school in the 1820's symbolized the rapid growth. German, Scotch and English craftsmen were lured to Cambridge to provide the needed skills in the glass and furniture businesses. New and larger enterprises were initiated. A. E. & W. Winchester established the largest soap factory in the country between Gore Street and Miller's River. By 1840 they had 50 employees. Sheriff and Stratton made brushes, and for three decades that was a leading Cambridge industry along with the ever-growing glass manufacturing. Bulk commodities like coal, lumber and granite arrived by water at yards which lined the waterfront.



79. INDUSTRY IN EAST CAMBRIDGE, 1879.

Late Nineteenth Century Industry

Around the time of the Civil War, New England entered a period of rapid industrialization, first to service the Union Army and later to supply growing domestic markets. These new markets were created as railroads (often financed from Boston) fostered westward expansion and as waves of immigrants from Europe filled American cities. East Cambridge, already a manufacturing center, was able to participate in this development for several reasons. In addition to its favorable geographical location and excellent transportation facilities, it had an abundant supply of cheap labor and ready capital. Spurred also by local technological advances, Cambridge moved in the vanguard of industrialization.

The geographical location of East Cambridge continued to encourage industrial growth in the second half of the nineteenth century just as it had earlier. The area was conveniently close to Boston which was one of the most important commercial centers in the nation. As Boston was running very short of land for both industrial and residential purposes (because of its location on a small peninsula), a good deal of manufacturing activity and house building spilled over into East Cambridge which was tied to Boston by two bridges. Furthermore, East Cambridge had good dock facilities and was pierced by two canals which expedited the arrival of raw materials and the shipment of manufactured products. The area was also intersected by the Grand Junction Railroad which gave East Cambridge access to the two main railroad networks (northern and southwestern) which entered Boston. Finally, huge tracts of undeveloped tidal flats, which could be filled in at no great expense, provided all the additional space for factories that the city's growing economy needed.

East Cambridge also had the necessary manpower to make large-scale manufacturing successful. If Cambridge's early labor force had been supplied by artisans from England and by New England farmers moving into town from impoverished farms, the bulk of the labor supply at mid-century came from Ireland where large portions of the population were forced to emigrate by the potato famines of

80. GELDOWSKY'S FURNITURE CO.

the 1840's. Already by 1841 there were more than 1000 Irish living and working in the area -- enough to support the establishment of a Roman Catholic church. By the end of the Civil War, almost half of the population of East Cambridge was Irish. Spread over three decades, the Irish immigration played a preponderent role in the political, social and economic history of the area.

In the realm of technological development, East Cambridge industries made significant progress in such fields as galvanized iron pipe, certain piano mechanisms, fire hose and a number of rubber

products, reversible collars, water proof hats, and glass -- not to mention the egg beater.

The second half of the nineteenth century saw the establishment of large industrial concerns. Some of these companies have lasted well into the twentieth century while others have left offspring that still survive. At the time of the Panic of 1873, the two largest concerns were those of J. P. Squire and G. G. Page. Squire's pork production and associated plants filled an entire two-block area of reclaimed land north of Gore and Seventh Streets. The largest employer at the time, it had more than 1000 men and women working within its walls. The Page box-making concern moved to East Cambridge after the Civil War when it outgrew its Cambridgeport site. It located below Bridge Street near the waterfront, along with several other wood-working industries (the ladder, casket, and furniture businesses) that were long-time staples of East Cambridge. Every year tons of lumber arrived from the Maine woods by boat and rail and later left as finished products by the same routes. The smell of sawdust, pork, and the nearby odors of soap, sugar, and rubber was the characteristic aroma of East Cambridge right through the turn of the century.

Changes in Population

Until the beginning of the Civil War, East Cambridge maintained a fair balance as far as the activities and incomes of its inhabitants were concerned. Aside from the 65 local residents who owned their own businesses, mid-century directories show an occupational distribution as follows:

laborers	220
skilled trades (others)	180
professional & white collar	140
glass workers	120
carpenters & builders	100
home supplies	60
stone cutters & masons	50
machinists	35
teamsters	35
tailors	25
brush workers	24

In addition to these artisans and laborers, there were officials and clerks who worked at the court house and a well-to-do class of professionals and capitalists. Some of this group carried on their businesses in Boston but chose to live in the semi-suburban environment of Putnam Hill. In 1857 two of Cambridge's six most wealthy men lived in East Cambridge. One was Jesse Hall, who lived at 26 Otis Street and owned a substantial lumber yard which was one of the first business enterprises in East Cambridge. The other was Samuel Parker who commuted to Boston from his house at 86 Cambridge Street.

After the Civil War, however, the character of the population began to change. As more workers settled in the area and new industry grew, the semi-suburban character of the peninsula declined. Those who had made their homes in East Cambridge because of its surroundings therefore departed. After 1853 horsecar transportation also immobilized the population. Well-to-do East Cantabridgeans participated in one of the earliest recorded "flight to the suburbs" as they moved generally westward to Dana Hill, North Cambridge, and beyond. Only one "mansion" was built on Putnam Hill after the Civil War (the Coven house of 1895 at 142 Otis Street). The bust of the 'seventies and the boom of the 'eighties were the last significant impetuses to change. Speculative building to house the new immigration of Italians, Poles and Portugese left the old residential area dotted with tenements wherever there was a pocket of available land. The economic and social changes that have taken place since that time have had little effect on the architectural character of the neighborhood. By 1900 the industrial and residential nature of East Cambridge were firmly fixed.

Twentieth Century

Transportation advances and the stimulus of the First World War encouraged a diversified industrial growth in Cambridge that continued unabated into the 1930's. Between the wars, Cambridge was second in Massachusetts in the value of goods manufactured and third in all New England, outranked only by Boston and Providence. The textiles, furniture, wood and paper products, paint, soap, candy, light metal products and tools, leather, and rubber goods were among the many which were stamped "Made in East Cambridge, Massachusetts."

Since the beginning of World War II, however, there has been a trend away from previous types of manufacturing to warehousing, to industrial research, and to the manufacture of technical instruments and precision machinery. This change has been accelerated by the fact that the small, multi-stored factories of the nineteenth century are less adapted to modern large-scale manufacturing processes than are new buildings organized on a single floor. The projected establishment in the immediate future of a complex of new county buildings as well as the continuing influx of highly technical manufacturing enterprises may constitute the twin forces of vitality and growth for East Cambridge of the future just as they did for the East Cambridge of Andrew Craigie almost a century and a half ago.

EAST CAMBRIDGE ARCHITECTURE

The Entity of East Cambridge

East Cambridge is a neighborhood in balance. In probably no other area of the city does such a just balance exist between people and their environment. One senses this in the active life of the streets -- housewives visiting on doorsteps, little boys playing ball in the streets, groups of young girls convoying small brothers and sisters to and fro. During waking hours the streets are never deserted. The scale of the area, its houses and streetscape, preserves the identity of the residents. Small houses are built close enough for neighborliness but usually not so close as to overcrowd. Small gardens are big enough to be used and enjoyed but not so large to isolate houses from each other. With a streetscape varied enough to avoid anonymity, a neighborhood of residences is complemented by a street of small stores, mostly family-owned and operated. Streets are for people, not for parked cars and moving traffic, and, except for the western vista down Cambridge Street, a view along almost any East Cambridge street is softened by trees and has a definite termination. "For Sale" or "For Rent" signs are all but non-existent, and, judging from the excellence and manifest individualism of building maintenance, the area has few absentee landlords. It is not at all rare to find a person who has lived his whole life in a one or two block radius. There is a sense of roots and a feeling of identity. Neighborliness is up and delinquency is down.

Historical forces have operated to shape the physical aspects of East Cambridge and give it the character that it has. The locale of the low hill surrounded by tidal flats and connected to Boston and Cambridge by a bridge and a causeway has already been described. These connecting links determined the major traffic routes about which the gridiron of streets was oriented, and later a railroad, laid alongside an older canal, established a definite western boundry for the area. The first center of manufacturing grew up along the shores nearest Boston Harbor, but when the glass factories moved away, this land was taken for railroad yards leaving Bridge Street (O'Brien Highway) as the district's northeast limit. To the north and south were tidal flats, areas which provided room for expansion. But because of the expense of filling, this land was developed only as it was required. Such limited availability of land tended to keep East Cambridge compact. Beginning at the bridgehead near the intersection of Cambridge and Bridge Streets, East Cambridge built out to the west. When, after 1875, land was needed for expansion, the tidal flats were available and there was no need to demolish buildings that had already been constructed. Thus peculiar geographical conditions imposed a certain consistency of development upon East Cambridge yet insured the preservation of its buildings. Starting at the east end of the district (near the old bridgehead) and moving westward, one can watch the chronological evolution of the architecture that lines the streets, and the fact that the district has definite boundaries make it much easier to maintain its integrity and special character.

Architectural Importance of the Area

The buildings of East Cambridge are not individually important, but they form a whole that is greater than the sum of its parts. There are no great works of architecture in East Cambridge, no pacesetters, no textbook examples; similar buildings exist in countless other American communities. Yet the area as a whole, and several of its streets in particular, have considerable architectural merit when the buildings are looked at together, in the full richness of their relationship one to another. Furthermore, the very ordinariness of East Cambridge architecture is an asset rather than a liability, especially when so many buildings have survived intact to the present day. The area offers a fine opportunity to study the everyday architecture of the middle years of the nineteenth century in its original setting.

Vernacular architecture -- the sort used every day by the average man -- is not frequently studied. Historians generally concentrate on the architectural tastemakers -- men like Bulfinch, Richardson, or Wright. It is true that history is made by such leaders and that their buildings usually have more artistic merit than the vernacular, but smaller buildings--those produced in quantity by contractors or builders or minor architects--also have value. Besides providing the shelter in which most of us live and work, they form the environment from which the oustanding buildings of an age emerge. The vernacular also illustrates the process of history. Vernacular builders take details from the avant-garde work of their time and graft them on to older architectural forms and solutions, thus forming a link with the past, a sense of continuity. Because it reflects so clearly the taste of the day, vernacular architecture cannot be overlooked in the study of any period.

In East Cambridge one can study the houses of workers and small business people with unusual completeness because the area itself has changed so little. Except for the section north of the Msgr. O'Brien Highway, which has been entirely rebuilt, there has been remarkably little modification of the mid-nineteenth-century community. Beyond one or two factories and some recent parking lots, the only demolition of early buildings has come from an effort to provide expanded facilities for the Middlesex County Courthouse.

ARCHITECTURAL INVENTORY: CAMBRIDGE, MASS. 1964

ADDRESS: 69 Thorndike Tract ____ Block ____

USE: (residential) commercial religious

TYPE: (single) double row ___ 2 deck 3 deck double 3d tenement Apart.

STORIES: 1 (2) 3 4 MATERIAL: (Frame) Brick Mod. compo

ROOF: (gable front) gable flank mansard flat hip ____

PLACEMENT: (narrow to street) broad to street square

ENTRANCE: flank (front side) front center

STYLE: L.Geo. (Grk.Rev.) Brk-It. Mans. Med. Q.A. C.Rev. Non- None-

ORNAMENT: little moderate (elaborate) pre 54

(1844) DATE: 1790 1800 10 20 30 40 (50) 60 70 80 90 1900 10 20 30

entrance only

DEGREE OF REMODELING: drastic moderate (minor) CONDITION: poor fair (excel)

IMPORTANCE TO SETTING: detrimental none moderate (great) INITIALED BB

DESCRIPTION: (for more important structures only)

type C plan
converted to 2-family house (1/floor)
gable front treated as pediment
entablature across front
corner pilasters.
porch full width of facade
reeded Ionic columns (stock capitals)
flush siding on porch
floor-length windows (ground floor)
entrance remodeled (frame and door)
interior well preserved. (stair, trim, mantels)
Scroll newel post
crossetted window, door trim, 1st fl.
interior shutters, parlors
sliding double doors, parlors
black marble mantels.

Methodology

At the outset of the East Cambridge survey, two well-known systems of inventorying buildings of architectural interest were available. One, the excellent form developed for the College Hill Study, assists in the evaluation as well as the description of a building. The other system, developed by the Historic American Buildings survey (a division of the National Park Service), utilizes two forms: a detailed Photo-Data Book description and the so-called Short Form. Although both systems were seriously considered and both provided valuable suggestions in determining the scope and method of this survey, neither system was adopted in total.

The method employed to record an area depends on the character of the district to be investigated as well as the interests and purposes of those conducting the inquiry. The East Cambridge study team was faced with a set of circumstances that seemed to call for a somewhat different approach from the two mentioned above. In East Cambridge the area as a whole is more important than the individual buildings; furthermore, domestic architecture is the district's chief value. Most of the early factory buildings have been replaced, while the commercial and civic architecture was not outstanding. In themselves, most of the houses do not merit the detailed investigation that the College Hill or HABS forms require; the essential need was to survey the total area in order to pick out the characteristic building types as well as the best buildings, groups of buildings, and streets. This called for a survey technique that could cover a large number of houses rapidly yet could be done with enough care to insure that no structure of importance was overlooked.

To accomplish this, the staff developed a form which was used for each of the more than 500 houses in the area. This form enabled the surveyor to describe the building (height, shape, roof, building material, condition etc.), to identify characteristic house types and plans, to designate general architectural style and approximate date, to evaluate roughly the worth of the architectural design, and to note the importance of the building to its environment. The form was designed to minimize written comments, a series of checks or circles being sufficient to record requisite information for most buildings. Additional space, however, was left at the bottom of the sheet where descriptive or historical notes could be added.

Once the area had been surveyed, buildings of unusual architectural value or those that seemed to be most characteristic of the area were identified, and the survey concentrated upon them. Historical documentation through the Registry of Deeds or Building Department records could proceed, and the building itself could be carefully inspected and described inside as well as out. All inventory

work was done by one member of the team in order to insure a consistent point of view, but the team often visited and discussed the area in pairs or as a group. The value of the dialogue in such architectural study and criticism cannot be overestimated. Sometimes the most practiced eye will miss a detail, and everyone benefits from the challenge and stimulation that come with discussion.

Non-Residential Architecture

A large percentage of the early civic, religious, and commercial architecture of East Cambridge still stands. Although subject to a good deal of change over the years, edifices of this type will probably be faced with even more drastic modifications in the future. It seems appropriate to record them at this time. Without going into the history and description of destroyed structures, an attempt has been made to identify the most important buildings of each class and to document them as far as possible.

Churches

The churches of East Cambridge have changed in character as the character of the population has changed, but the sites and many of the buildings have remained the same since the nineteenth century. The best way to understand church architecture in East Cambridge is through the history of these sites rather than through the history of the various denominations.

The first church site to be occupied in East Cambridge was the southwest corner of Cambridge and Third Streets. The land (100 feet on Cambridge Street by 200 feet on Third, running all the way to Otis) was donated by the Canal Bridge Proprietors to the Methodist Religious Society in 1823 on condition that a church be built there within two years and a parsonage and school within three years. The Methodists (in 1818) had been the first religious group to establish themselves in East Cambridge; they met at first in private houses, in the schoolhouse on Third Street, and in a small chapel (later converted to a dwelling house) on the north side of Gore Street between Third and Fourth. Their new brick church at Cambridge and Third Streets was dedicated in 1825. It fronted on Third Street, with the parsonage (fronting on Cambridge Street) built along the rear wall. Two adjoining brick row houses were built a few years later (1831) by Amos Binney, a trustee of the church and a large East Cambridge land holder. These houses, standing alone today (262 and 266 Cambridge Street), once continued the line of the church and parsonage and gave a unified effect to the block.

The Methodists built a school on the other half of their property, at the corner of Third and Otis. This building, leased to the Wesleyan Academy of Wilbraham, was the first church-sponsored school in East Cambridge. Ever since then parochial schools have played an important role in the community. The Academy building was torn down in 1851 to make way for the four brick row houses (55-61 Otis) which are there today.

The original Methodist church fronting on Third Street was demolished in 1870 to make way for a much larger brick church fronting on Cambridge Street. This new building, dedicated in 1872, remained in use until 1952, when it was torn down. The land is now used as a parking lot. The Methodists, the first religious society in East Cambridge and the only remaining Protestant denomination, moved to a converted dwelling house at 72 Fourth Street between Otis and Thorndike, where, as Trinity Methodist Church, they still hold services.

In 1827 the land on the northwest corner of Third and Thorndike Streets was sold to the Third Congregational Society (Unitarian), and a brick meeting house was erected. This building stands, virtually unchanged; it is the oldest church building in East Cambridge and the second oldest (after Christ Church) in the entire city. It was

81. POLISH NATIONAL CATHOLIC CHURCH (FORMERLY UNITARIAN), 1827.

Unitarian until 1875, when it became Episcopal (the Church of the Ascension). Since 1942 it has been the Holy Cross Polish National Catholic Church.

Like the vernacular architecture around it, this meeting house of 1827 is conservative in style. It follows the standard plan for Federal churches: a rectangular, gable-roofed meeting hall with a wide entrance tower (originally surmounted by a cupola) at the front. The brick side walls each have three round-headed windows; the entrance tower is also three bays wide, with doors and windows set in shallow brick arches. The building recalls the Charles Street Universalist Meeting House in Boston (1804), probably designed by Asher Benjamin; only the heavy granite foundation and the frame around the center door give evidence of the oncoming Greek Revival. When compared with a thoroughly Greek Revival structure like Alexander Parris' granite First Church (Unitarian) in Quincy, begun the very same year, the Cambridge church seems especially conservative.

Inside the entrance tower, stairs on either side lead up to the meeting hall, which is on a somewhat higher level; a single flight of stairs in the center leads down to the basement. The meeting hall itself has a cove ceiling and a gallery around three sides. The interior fittings (pews, altar screens, cast-iron columns supporting the gallery) are not original but are predominantly nineteenth century. The stained-glass windows were put in by the Episcopalians in the nineties; one of them (the first on the right) is dedicated to the memory of Phillips Brooks.

82. POLISH NATIONAL CHURCH, INTERIOR.

83. ST. FRANCIS OF ASSISI ROMAN CATHOLIC CHURCH (FORMERLY BAPTIST), 1838.

The lot originally deeded to the Unitarians was sixty feet wide (on Third Street) by 100 feet deep (on Thorndike). The church building only covered eighty feet of this depth; the rear twenty feet was sold and a brick town house built there in 1827-28. That house (59 Thorndike Street) still stands; it bears the same relation to the church as did the parsonage of the first Methodist Church at Cambridge and Third, but it seems to have been in private hands all along and not to have been used as a parsonage. The proceeds from the sale of the lot presumably helped pay for the church building. Unlike the Methodist parsonage on Cambridge Street, no adjoining row houses were built along Thorndike Street; 59 Thorndike is - and always has been - the only house of its type on the street.

One of the early ministers of the Unitarian church (1830-40) was James D. Green, who later turned to more secular pursuits and became the first Mayor of Cambridge (1846).

In the same year that the Unitarian church was built, the Baptists (who had been established in East Cambridge since 1824) built a wooden meeting house on the northeast corner of Cambridge and Fourth Streets, facing Cambridge. This 1827 structure burned ten years later, and a new, somewhat larger church made of brick was erected on the same site. The new building, dedicated in 1838, had its meeting hall a full story above the entrance level, reached by staircases on either side. A vestry and other rooms were located on

84. ST. JOHN'S ROMAN CATHOLIC CHURCH, 1842. ARCHITECT, RICHARD BOND.

85. UNIVERSALIST CHURCH, 1865, LATER ST. JOHN'S LITERARY INSTITUTE, DESTROYED.

the ground-floor level. This 1838 building of the Second Baptist Church still stands as St. Francis of Assisi Roman Catholic Church. The Franciscans renovated the structure in 1932 and added the tall campanile which is a Cambridge Street landmark.

The next church site in East Cambridge was on the north side of Cambridge Street between Third and Fourth. An existing building on the lot (Berean Hall) was hired in 1834 by the Second Universalist Society (founded 1823). In 1843 the Universalists purchased this hall, enlarged it, and converted it to a church; there they stayed until 1865, when they moved to Otis Street. The old building was taken over by the St. John's Literary Institute, a Catholic fraternal organization which played an important role in East Cambridge life well into the twentieth century. The Institute demolished the old church edifice and replaced it with a three-story brick building in 1888. The second structure was demolished in 1946 and a parking lot occupies the site today.

The church which had spawned the Literary Institute was St. John's, the first Catholic church in the city of Cambridge. Built in 1842 on the east side of Fourth Street between Cambridge and Otis, the church edifice was of frame construction, designed by Richard Bond and built by Royal P. Deshon. A few years later, in 1846, a rectory was built alongside the church, near the corner of Otis. St. John's served the Catholic residents of East Cambridge until 1876, when Sacred Heart Church was opened. The old building, serving a variety of church-related functions including that of a school, was torn down before 1934. The land on which St. John's and the rectory stood is now a children's playground.

The next East Cambridge church site was the northeast corner of Second and Thorndike Streets. There, in 1843, the Evangelical Church built a meeting house, which remained until 1876, when it was moved to Somerville. The row of six Ionic-porticoed wooden houses on the eastern side of Second Street was built at the same time as the church (although not by the church), completing in an architecturally unified manner the block front opposite the court house square. The site of the Evangelical Church is now occupied by a loft building.

With the completion of the Evangelical Church in 1843, there were six churches in East Cambridge -- all located within a block of the present Registry of Deeds and Probate Building. No more church buildings were needed in the area for a good twenty years.

In 1865 the Universalists built a new church on the north side of Otis Street between Fourth and Fifth, selling their old building on Cambridge Street to the St. John's Literary Institute. The Universalists stayed in their new location until 1907, when they sold the property to the Polish Catholics. The 1865 building was demolished by the collapse of its steeple during the hurricane of 1938. It was replaced by the present brick structure of St. Heldwig's Polich Catholic Church the following year.

86. ST. HEDWIG'S POLISH CATHOLIC CHURCH, 1939.

The Catholic population of East Cambridge kept increasing during the nineteenth century, making a larger church than St. John's a necessity by the seventies. In 1874 ground was broken for Sacred Heart Church on the southwest corner of Sixth and Otis Streets, the last important church site in East Cambridge. Opened in 1876 and dedicated in 1883, Sacred Heart is the largest church in East Cambridge and the only one built of stone. It measured 75 by 150 feet and had a corner tower with a spire reaching 180 feet into the air. (The steeple was damaged in 1961, requiring the removal of the top part.) The building was constructed of blue slate with granite trim in an English-derived Victorian Gothic style; the carved stone altar made under the direction of Peter Paul Pugin, son of the famous Victorian architect, was imported from Cheltenham, England. The building remained in active use and good condition until June, 1963, when a four-alarm fire seriously damaged the interior. A new roof, new windows, and all new interior decoration were required which completely changed the Victorian Gothic feeling of the interior. The altar, fortunately, survived nearly intact.

Sacred Heart Parish required more buildings than just the church; the Parish House, adjacent to the church, was built in 1888 and the school building in 1902. The school expanded so that for a while it took over the old public school at the corner of Sixth and Thorndike, where the library now stands.

Besides being the largest, Sacred Heart is the only one of East Cambridge's nineteenth-century churches still being occupied by the congregation which built it.

87. SACRED HEART ROMAN CATHOLIC CHURCH, 1876. ARCHITECT, P. W. FORD.

88. SACRED HEART CHURCH, INTERIOR.

Schools

As early as 1811 the citizens of Lechmere's Point petitioned the town government to establish a school in their district, but it was not until 1818 that the population of East Cambridge warranted the construction of a school. The first schoolhouse was located on the east side of Third Street between Gore and Bridge Streets. It was a modest structure erected at a cost to the town of only $400; the remainder of the cost was raised by subscription.

From the 'teens on, East Cambridge enjoyed continual growth, and each decade saw the construction of a new schoolhouse. In 1825 the first Putnam School was built on the site of old Fort Putnam, at the southwest corner of Otis and Fourth Streets. This building cost $1,350, $550 paid by the town and the rest contributed by individuals. There has been a school on the site - the highest in East Cambridge - ever since. Although no pictures of the early structure have been found, it and all of the other early school buildings of East Cambrdge were domestic in scale. One can see in the 1854 and 1873 maps that each school covered very little more ground area than a residence. The present Putnam School, a massive, three story, brick structure of the Queen Anne style, was built in 1887.

89. PUTNAM SCHOOL, 1887.

In 1832 the first Thorndike School was built on the north side of Thorndike between Fourth and Fifth. Enlarged in 1840, the building cost a total of $2,585. There has been a Thorndike School in East

Cambridge ever since, but the location has changed two times. In 1860 a new school house was built on the northeast corner of Thorndike and Sixth, and the old land was sold for residences. Although no photograph of this or the related schools has been found, old residents of the area recall that the Thorndike, Gore, and Otis School buildings were identical in design. Built of brick, two stories high and capped by a ridge roof, there was a center hall with entrance doors at each end and four classrooms on each floor. The school stayed at Thorndike and Sixth until 1911, when the present Thorndike School was completed. No longer on the street which gave it its name, the present school is located off Sixth Street between Spring and Hurley. The second Thorndike School building, so convenient to the Church of the Sacred Heart, was taken over by Sacred Heart School, which used it through the twenties. The site is now occupied by the Cardinal O'Connell Branch of the Cambridge Public Library (1939).

East Cambridge's fourth school was built in 1843 on the north side of Otis between Fifth and Sixth. Built at a cost of $5,400, Otis School was considered in the School Committee Report of 1845 to be "quite a magnificent structure." From 1843 to 1847 it was known as the High and Grammar School of East Cambridge. The building remained in use as a public school until 1914, when it was taken over as a parochial school by the Polish Catholics, whose church was a block away on Otis Street. St. Heldwig's Polish Grammar School continued until 1954. The building has since been torn down, and the land is vacant.

Gore School, on the south side of Gore Street between Third and Fourth, was also built in the forties to accommodate the families who lived north of Cambridge Street because the old Third Street School was inadequate. Gore School continued as a visible part of the school system until 1924, when the building was taken over by the Franciscan Fathers for a parochial school. A new building was erected on the site in 1958, making St. Francis of Assisi School the most modern in East Cambridge.

The first church-supported school in East Cambridge was Protestant - Wesleyan Academy - situated at the corner of Third and Otis Streets. It was sponsored by the Methodist church between 1828 and 1851. During the last half of the nineteenth century all the schools of East Cambridge were public. With the opening of Sacred Heart School in 1902, the swing to parochial schools began - a result of the increasing size and diversity of the Catholic population. Between 1902 and 1954 there were three parochial schools (Sacred Heart, St. Heldwig's, and St. Francis) and only two public schools (Putnam and Thorndike). Now that St. Heldwig's has closed, the balance is even, with two of each.

County Buildings

The most important public buildings in East Cambridge are those belonging to Middlesex County - the various court houses and jail buildings. Dating back as far as 1814, these solid, red-brick, nineteenth-century structures are soon to be replaced by a skyscraper-oriented complex of modern buildings and landscaped plazas. Although the new project will undoubtedly benefit East Cambridge economically, something of the history and spirit of the area will be effaced forever when the old county buildings are demolished.

The early promoters of Lechmere's Point brought the court house and jail to the area. Faced with lagging land sales due to the Embargo and the War of 1812, they needed fresh stimulus; the bridge alone was not enough to make people want to settle in East Cambridge. In 1813, when the court house in Old Cambridge needed replacement, the Lechmere Point Corporation offered land to the county and agreed to build a new court house and jail at a cost not to exceed $24,000. The offer was accepted, and construction was carried on in the years 1814-16 from plans supposedly prepared by Charles Bulfinch. The land set aside for county use included the entire block bounded by Otis, Thorndike, Second and Third Streets and the westerly portion of the next southerly block (between Thorndike and Spring). The court house was built on the Third Street side of the larger parcel and the "gaol" (or jail) on the smaller parcel.

The first court house was enlarged in 1848 to the form it takes today. The architect was Ammi B. Young, who had designed the Boston Customs House (one of the city's most important Greek Revival structures), and who for many years was Supervising Architect of the Treasury Department, responsible for the design of government buildings all across the country. Because it had to incorporate the existing 1814 Courthouse, the style of Young's East Cambridge building is quite conservative, especially when compared to his more famous Customs House in Boston.

Set back generously in the square block reserved for it, the Courthouse gained in monumentality from the upward slope of the ground. The principal facade, facing Second Street and now mostly obscured by later construction, has a projecting pedimented central pavilion five bays wide, flanked by wings of three bays each. A massive cupola crowns the whole composition. A low one-story porch, supported on cast iron columns, runs across the central part of the facade, and a modified Palladian window fills the pediment. Windows in the principal story (the second) are round-headed with archivolts connecting wide brick pilasters. The whole design has a restrained monumentality quite in keeping with its function as a seat of justice.

90. THE COURT HOUSE IN 1848, SECOND ST. FACADE. ARCHITECTS, BULFINCH, AMMI B. YOUNG.

91. THE COURT HOUSE TODAY, THIRD ST. FACADE.

92. CLERK OF COURTS BUILDING, 1889. ARCHITECTS, R. WAIT AND OLIN CUTTER.

The building resumbles the Boston State House in its basic tripartite form, with projecting pedimented central pavilion, central crowning motif (here a cupola rather than a dome), and low hip roof; it also has similar stylistic details, such as the round-headed windows in recessed panels. It was not, however, a copy of the Bulfinch structure but belongs to a generic type of American public building.

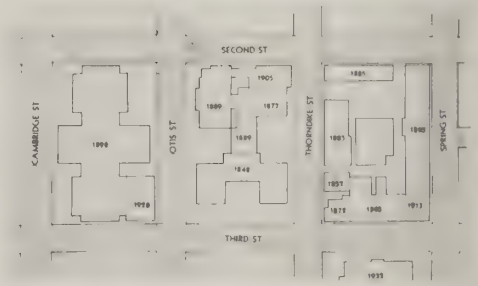
While the detailing with its round-headed windows, recessed panels, etc. is essentially late Federal, certain features (the panelled chimneys, the heavy granite doorways on the Third Street side, and the wide brick pilasters on all the facades) give evidence of its Greek Revival date. The building as it appears today is particularly confusing stylistically because a thorough remodeling of 1901 (Olin W. Cutter, Architect) replaced most of the windows with single-paned sash and provided a heavy Colonial Revival metal cornice in place of Young's more delicate wooden one. The interior detailing, too, mostly dates from 1901. The cupola, although rebuilt in 1938, follows the original quite accurately.

The best aspect of Young's court house originally was its main facade which faced the square and Second Street. Unfortunately, the building was not to maintain this isolated, monumental position for very long, for the county was growing fast and soon required a new building to house the Registry of Deeds. In 1877 this new structure was built on the Second Street half of the block, facing Young's court house. Its placement, size, and materials were compatible with the first court house, but its detailing gave evidence of its later date. Built on a heavy, rough-faced granite foundation, the new Registry had narrow vertical windows, brownstone trim with incised linear ornament, a corbeled brick cornice, and a steeply-pitched hip roof capped by elaborate cast-iron cresting. The two buildings worked fairly well together on the court house square; each was able to maintain a certain amount of integrity and monumentality. Even this relationship was not to last, since this was the period of the county's greatest growth. In 1889 the Registry building was moved back towards Thorndike Street and a new structure built in front of it, facing Otis Street. The new building accommodating the Probate and Insolvent Courts and designed by Robert P. Wait and Olin W. Cutter, was remarkably similar in general configuration to Young's court house. It had a pedimented central section (three bays wide) and round-headed windows on the principal (second) story. There were differences, of course. The pedimented entrance projected only slightly from the plane of the facade; the trim was heavy and made of brownstone; a brick parapet above the cornice masked a very steeply pitched hip roof; and there was a subordinate wing on the Second Street side, similarly detailed. Essentially lacking plane wall surfaces, the facades were composed of rhythmic alternations of narrow pilasters and wide recessed window units.

Even this new building was not sufficient to satisfy the needs of the rapidly growing county. A scant seven years later, in 1896, construction was begun on the new Registry of Deeds and Probate building on the block bounded by Second, Third, Cambridge and Otis Streets. The entire block had to be acquired for this project, involving the destruction of (among other buildings) a row of fine brick town houses built by the Lechmere Point Corporation in 1820. The new building, designed by Olin W. Cutter, is perhaps too monumental for its site. It dwarfs the earlier county buildings, and there is barely enough room to squeeze in the massive staircases leading up to the two pedimented porticos. These porticos, with their enormous red-brick Ionic columns, are the central feature of the Cambridge and Otis Street facades; everything else falls in place around them in a highly formal, symmetrical manner. Even the two side facades (on Second and Third Streets) have elevated brick-columned porches, but these are purely ornamental, since no access can be gained to them. The whole building is designed with impressiveness and monumentality in mind while efficiency and function are secondary considerations. The building exemplifies well the so-called American Renaissance style which was one of the after-effects of the 1893 Chicago World's Fair. Although buildings like it were built all across the country in the years before the First World War, few were made of traditional red brick; stone or yellow brick were the usual materials. Probably the East Cambridge building was built of red brick in deference to the older structures around it, for Mr. Cutter demonstrated an ability to fit all of his court house building into its environment. Certainly the material gives it a warmth and textural richness which are shared by few others of its type, and there is something memorable about the great portico columns built entirely of brick. When the new Registry and Probate building was completed, the 1889 Probate and Insolvent Court was converted for use as a normal court building and as the office of the Clerk of Courts, whose title was engraved in the stone lintel above the entrance.

If the county had grown no more, East Cambridge would have had a fairly pleasant and comprehensible group of county buildings. But this was not the case. Twentieth-century additions, made in the attempt to avoid further land acquisition, overcrowded the site thus destroying the integrity of the older buildings and detracting from the character of the complex. A new building along Second Street obscured most of the 1877 edifice and eliminated the last remaining open corner of the original court house square. Even the 1896 Registry had its axial symmetry violated by a large addition (1912) at the corner of Otis and Third. Since no more stop-gap means for providing room are currently available, and since a crying need exists for larger and more efficient quarters, plans have been prepared for an entirely new court house complex. Key to the whole proposal is a fourteen-story skyscraper on the site of the existing jail.

93. REGISTRY OF DEEDS, 1896. ARCHITECT, OLIN CUTTER.



94. COURT HOUSE COMPLEX, DATED DIAGRAM.

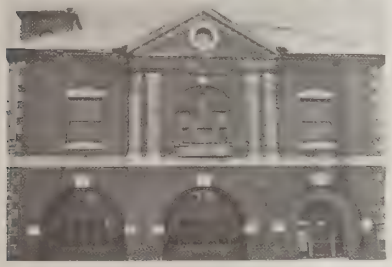
95. HOUSE OF CORRECTION OFFICE, 1852.

96. JAILER'S HOUSE, 1872.

97. POLICE STATION, SCIARAPPA ST.

98. THIRD DISTRICT COURT, 1931. ARCHITECT, CHARLES R. GRECO.

99. FIRE STATION, THIRD ST., 1894.



100. PUBLIC LIBRARY, CARDINAL O'CONNELL BRANCH, 1930'S.

Originally the jail occupied only a 75-foot deep strip of land on Third Street between Thorndike and Spring. By 1850, however, the county had acquired the rest of the block, around the periphery of which the necessary jail buildings were constructed. The open space in the middle served as an exercise pen. The only jail buildings of any architectural interest are the office (facing Thorndike Street) and the jailer's house (at the corner of Thorndike and Third).

The House of Correction office, built in 1852, is simply a blownup version of a gable-end-to-street Greek Revival house. Made of red brick, as are all the county buildings, it has panelled pilasters in lieu of full Greek columns across the front. At one end it connects with a large brick archway leading into the jail precinct. The jailer's house, built in 1872, is a fine example of the Academic Mansard style, especially in its formal, axial entrance pavilion. So profuse a use of smooth granite for foundation, trim, and columns is unusual for the district.

The only other county buildings of note are those of the Third District Court of Eastern Middlesex. Originally a police court, this juridical unit moved into quarters of its own for the first time when the building at the northeast corner of Third and Spring Streets (in the jail block) was completed in 1913. The court stayed there until 1931, when the present building (designed by Charles R. Greco) was constructed on the west side of Third Street between Thorndike and Spring. This latest county building, Georgian Revival in style, reverts to the same tripartite facade design used on Young's 1848 court house; there is even a cupola on top. For this building the county at least provided a new and adequate piece of land, although at the expense of some fine early row houses.

Other Public Buildings

Although so badly hampered by lack of adequate space that they completely fail to work together as a coherent group, the architectural designs of the early county buildings do maintain more unity than most aggregates of public building in America constructed over a seventy-five year period. The remainder of the civic structures in East Cambridge contain little quality that distinguishes them or relates them specifically to the community in which they were built. They are merely examples of a provincial architecture built across the river from Boston. With the city hall, the main post office, and the main public library of the city located between Harvard and Central Squares, East Cambridge has only branches. There is no longer even a police station in the area, and the brick building on Sciarappa Street (between Cambridge and Gore) which was used for that purpose is now boarded up. The fire station on Third Street at the corner of Gore dates from 1894. It was built there when the construction of the Registry of Deeds and Probate building necessitated a removal from its former site at Third and Otis Streets. The building is Colonial Revival in style, with a good, almost Federal Palladian window on the upper part of the facade.

The East Cambridge post office (Cambridge, Massachusetts, 02141) is located on the south side of Cambridge Street between Third and Fourth. It is a one-story, false-front, store-type building of negative architectural merit. It was built in 1909 to serve as the post office.

The Cardinal O'Connell branch of the Cambridge Public Library occupies the old site of the Thorndike (later Sacred Heart) School on the northeast corner of Sixth and Thorndike Streets. It is a simple, rather satisfying example of the 1930's Colonial style, used so often

in schools and public buildings. Built in 1939, about the same time as the Third District Court House, the library building is considerably more successful, probably because of its lesser pretensions.

Halls and Banks

Of moderate architectural interest are four halls that were built in East Cambridge for the use of organizations or the public. (Halls built for church bodies are not included). The oldest surviving hall (1837) occupies the third floor of the brick grocery store at Second and Gore Streets. Approached by only one stairway which is siutated in a side ell of the building, the hall occupies the full 50 x 34 foot area of the building. It is divided into five bays by heavy (12 x 14"), timber beams, and a double hung window is placed in each bay. The two end bays have flat plaster ceilings and utilize the attic space above for storage while the three center bays are covered with a low, plaster vault that rises above the beams. A simple but heavy wooden cornice, that corresponds to the height of the large beams, crowns the walls.

The spatial character of the interior derives a certain distinction from the higher ceilings of the middle bays, and the plain plaster surfaces of walls and ceiling impart a clear simplicity to the interior volumes. Originally there were two fireplaces on the rear wall, but these have been blocked up, and a bench once ran around the wall of the large room. Tax records and deeds merely note this as the property of Thomas Foster and no organization is mentioned.

A handsome three story brick building stands on the southeast corner of Second and Cambridge Streets (18-22 Second). Built in 1853 by Ephraim Buttrick and Lorenzo Marrett, this structure stood originally on the southwest corner of the same intersection, and it was moved to its present location in 1895 when its location was acquired by the County for the present Registry of Deeds building. In 1866, Buttrick and Marrett sold the building to the Lechmere Bank for its offices. When moved, the building was rotated 90 degrees, the original Cambridge Street facade being turned to face Second Street. In 1964 the property changed hands and it is said to be scheduled for demolition. If this happens, a handsome building and an important landmark of central East Cambridge will disappear.

Of pressed brick trimmed in brownstone, the design of the old bank is conservative. The pitch of the roof, the gable treated as a Greek Revival pediment, the complete entablature, and window trim are all Greek Revival in character. The only indication of the ascendent Italianate manner of the 1850's is found in the twin windows with round brownstone archivolts supported on graceful cast iron columns.

101. STORE, SECOND AND GORE STS., 1837.

102. HALL, THIRD FLOOR.

103. 18-22 SECOND ST., 1853.

104. ODD FELLOWS HALL, 303 CAMBRIDGE ST., 1862.

105. ODD FELLOWS HALL, INTERIOR.

106. 305 CAMBRIDGE ST., 1877.

On the third floor is a modest hall which occupies one-third of the floor area. As long as the building is deep (45 feet) and 25 feet wide, the hall is covered by a simple cove ceiling. Otherwise the hall has no particular architectural character. The remainder of the third and second floors were divided into office suites.

The Odd Fellows Hall at 303 Cambridge Street, built in 1862, still retains much of its original character. Only 30 feet wide, the facade is organized in three bays by grouped windows and a rather cramped mansard roof divided into three sections. The principal lodge room, 30 x 45 feet in size, is situated on the third floor and is spanned by a plaster cove ceiling 15 feet high. Lighted by two large windows at the rear, this room retains much of its original furniture and character. The front 15 feet of the floor space is occupied by stair hall and fraternal office. A small stair from this office leads to storage rooms and wardrobe which are situated in the mansard roof at the front of the building. The second floor has been remodeled, but it probably served as a social hall with kitchens and offices. A store occupied the ground floor.

The fourth hall in point of date was built as a lodge for the German Order of Harugari, in 1873, at the corner of Sixth and Spring Streets. The main hall with a stage occupies most of the second floor while kitchen, offices, and a large dining hall are situated on the third floor. Two large trusses that span the 60 foot length of the main hall are integrated with the mansard roof and are partially exposed in the third floor dining hall. This hall is the only one to have both front and rear stairs. The sale in 1920 of the hall by the German club to the Polish National Building Association indicates the changing character of the East Cambridge population.

One more hall at 305 Cambridge Street was built in 1877 by F. N. Goldsmith, and no organization is mentioned in its early history. With the usual store on the ground floor, it has hall space on the two upper floors, but both interiors have been too drastically changed to merit comment. Only 28 feet wide, the single flight of stairs between the second and third floors was cleverly moved to the back of the building so as not to diminish the width of the main hall. The elaborate facade of this building will be mentioned in the discussion of Queen Anne buildings in East Cambridge.

East Cambridge banks are also of some architectural interest. In the years following the Civil War, the Lechmere Bank had its offices in the three-story brick building now located at the southeast corner of Second and Cambridge Streets but which at that time stood across the street. Outgrowing the building, it moved in 1895 to a new one-story building at 292 Cambridge which was demolished in 1932 to make way for its impressive successor mentioned below.

Standing at Third and Cambridge Streets and built of white limestone with monumental Ionic columns, the Middlesex County National Bank is the very image of conservative dignity that banks on almost every Main Street in America sought to emulate during the 1920's. Designed by T. M. James and constructed in 1917, this structure attains a considerable monumentality within and without despite the small (25 x 90 foot) dimensions.

Down the street at 292 Cambridge, the East Cambridge Savings Bank is a granite building of distinction. The work of the same architect, who thirteen years earlier had designed the Classical bank mentioned above, this building is somewhere between Italian Romanesque and Byzantine in architectural style. The contrast emphasizes the extreme eclecticism of the period. Undertaken in November 1931 at the very depth of the depression to provide work for artisans of East Cambridge, no expense was spared in creating a substantial and beautifully executed edifice. Fine marble panels, bronze grills and granite exteriors were embellished by a prominent sculptor of the period, Paul Fjelde; although the basic forms of the design derive from Medieval sources, the ornamental detailing is what then was popularly termed "modernistic." Tending toward simplified, geometric patterns rather than strictly archaeological shapes, the ornamentation is conceived of and used in ways that are traditional. This kind of work illustrates a curious but interesting transitional moment in American architecture where designers begin to reach out for a new expression. They could conceive of a new decorative "style", but very few Americans at that moment had the courage to embrace the spartan logic of the International movement that was spreading through Europe; indeed, very few Americans had then even heard of it.

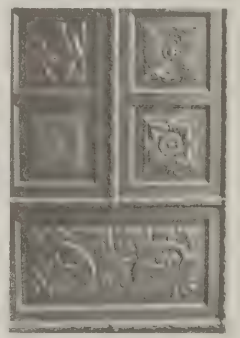
Retail Stores

The architecture of Cambridge retail stores built in the nineteenth century is basically the same as that of the houses. As long as men depended on their own feet to transport them, their cities had to be compact. This meant that living quarters had to be stacked above street-level shops. The edifice which combines shops and living quarters in this manner reaches far back in the western tradition, to the Middle Ages and even before. Streets with long strings of one-story shops are novel productions of the trolley car era while far-flung shopping centers come with the automobile age. Furthermore, most retail stores of the mid-nineteenth century were small in scale, essentially a shop run by one man or a family. The store building, therefore, was not too different in scale from a house, and the two activities could be combined harmoniously in a single edifice.

107. MIDDLESEX COUNTY NATIONAL BANK, THIRD AND CAMBRIDGE, 1917. ARCHITECT, T. M. JAMES.

108. EAST CAMBRIDGE SAVINGS BANK, 292 CAMBRIDGE ST., 1931. ARCHITECT, T.M. JAMES

109. DETAIL OF FRONT DOOR, EAST CAMBRIDGE SAVINGS BANK. DESIGNER, PAUL FELJE.



The earliest business center in East Cambridge was near the western end of the Craigie bridge -- an area which has since been entirely rebuilt. Apparently the earliest store building to survive stands on the southwest corner of Second and Gore Streets, (Fig. 101). In 1811, the year in which the street system of East Cambridge was plotted, a building stood on this location. Perusal of tax records, however, indicate that the present building dates from 1837.

Built of brick with foundation, sills and flush lintels of granite, it is capped by a roof that is both hip and gable, a solution that results when two ridge roofs meet at right angles. The clear geometric quality of this Late Georgian design and the crisp brick cornice are

110. 232 HURLEY ST., 1872.

111. 521-523 CAMBRIDGE ST.

112. 540 CAMBRIDGE ST., 1875.

typical of East Cambridge vernacular building of the 1830's. Within, the Gore Street building does not have the living quarters that generally were provided on the upper levels and which is suggested by the fenestration. Except for a corner office, the second floor served as a storage area whose walls were left unplastered. The entire third floor is given over to a hall with plastered walls and a handsome plaster vaulted ceiling. The stairway is situated in the ell opening on Second Street. An interior hoist to raise goods to the second (but not the third) floor was situated just inside the door at the west end of the facade. Although the door to the hoistway has been particially blocked up, its granite lintel shows that it was unusually wide. The hoist area has been floored so that it was impossible to determine if the hoist went to the basement also.

A more complete picture can be obtained of store architecture dating from the middle decades of the century. The most important observation to be drawn from it is that essentially the store building follows the same side hall plan that dominates domestic architecture at this time -- a type of plan that will be discussed more fully a few pages further on. The separate entrance that leads to a relatively narrow stair hall and thence to the living quarters above is pushed to one side of the facade while the store retains the rest of the ground floor area. Essentially, therefore, the store occupies the space ordinarily reserved for the double parlors.

A larger store building generally follows the scheme of the double house. At 521-23 Cambridge Street, two entrances with their separate halls and stairs are placed together in the center of the composition with store area at either side. This soluton leads to an awkward space division inside. If one store needs the entire ground floor, as is the case at 341-343 Cambridge, a large block is cut out in the very middle of the store area by the stairs leading to residential quarters above. This solution, which emphasizes the private stair as much as the store and which hampers the flexibility of retail area, was still used late in the century as one sees at 469-73 Cambridge Street, built in 1882.

With an increased volume of business and the consequent need for larger areas of uninterrupted floor space, store plans were modified. One solution, in a corner building at 566 Cambridge Street, places the residential stairway in the rear to be entered from the side street. This allows the full fifty feet frontage to open on the principal street. 616 Cambridge Street (1869), which is not located on a corner, pushes entrance stairs to one end of the ninety foot building. On the second floor a long lateral hall gives on to apartments situated on the front and back sides of the building.

In external appearance early structures frankly express their dual use as store and dwelling as a number of good and unchanged examples testify. Large areas of glass show windows announce the store, while the fenestration of the upper floors and the separate entrance at street level indicate the residential usage. Entrance doors are generally double and their size and degree of elaboration are no different from those of a fairly pretentious private house. The scale of the early show windows is more domestic than modern ones because the limited size of available glass panes necessitated the use of numerous dividing bars.

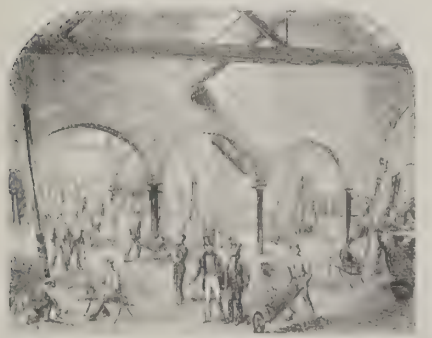
The two handsomest store fronts of the period to survive in East Cambridge are the barbershop at 540 Cambridge and the store at 232-36 Hurley. In both instances three-quarter round mullions of wood support the show window next to the entrance way while the upper part of the window is ventilated. The symmetrical manner in which the entrance to shop and living quarters are organized about the larger store window at 540 Cambridge Street is admirable (1875). 232-38 Hurley, a well ordered design built in 1872, maintains its original bracket decoration and window divisions, and it serves as a reminder of how much more interesting is a building that has not been stripped of its ornamentation in the name of modernization. Although cast iron store fronts were available after the 1840's, no store buildings in East Cambridge use this material.

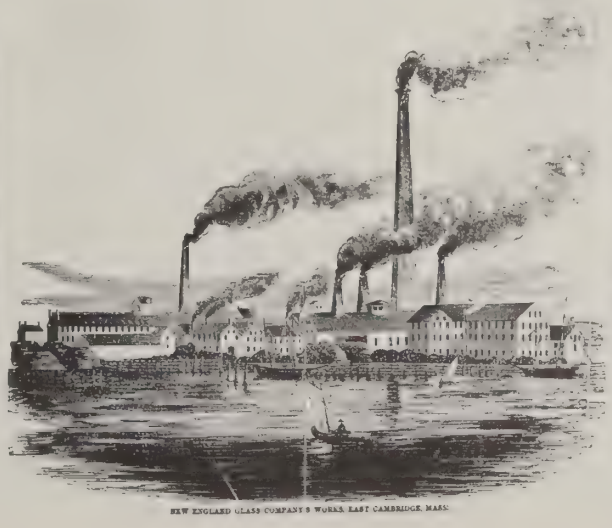
Factory Buildings

Cambridge has owed a large part of its growth since the middle of the 19th century to manufacturing. The first important factories were located in areas easily accessible by water around the edge of East Cambridge and Cambridgeport, and eventually they occupied the space between the two sections as this area was filled in. In the course of progress, as older businesses have failed, new firms have generally taken over the land and buildings of their predecessors. Older type factory buildings have sometimes been torn down and replaced by more up-to-date ones. Thus, within the fairly rigidly defined factory areas of Cambridge, there is a collection of factory architecture covering almost the entire industrial growth of the city.

No attempt will be made here to discuss all the buildings surviving from all periods of factory development. Because there are so many factories, especially of recent types, typical examples only will be taken to show this development.

The buildings of the New England Glass Company, one of the earliest and, in the course of its existence, one of the largest of Cambridge factory complexes, were built of brick. This factory complex, established in 1814, reached its peak in 1851 when the great chimney 240 feet high (10 feet taller than Bunker Hill Monument, as any citizen of





NEW ENGLAND GLASS COMPANY'S WORKS, EAST CAMBRIDGE, MASS.

113. NEW ENGLAND GLASS COMPANY WORKS.

114-115. INTERIOR VIEWS. GLASS MAKING.

116. DAVENPORT CARRIAGE COMPANY IN 1850.

117. 1870 DAVENPORT BUILDING, NOW LATEX CORP.

118. 1854 DAVENPORT BUILDING, NOW LATEX CORP., ALBANY ST.

East Cambridge will proudly tell you) was completed. This chimney dominated the actual factory buildings which were two to three stories high. Old pictures show them to have been simple, rectangular buildings with pitched roofs, much like earlier barns or large houses. Simple window openings are arranged in strictly regular bays and rows. The timbers of the large open spaces within were supported on brick arches and iron columns. In the use of the latter, the Glass Company was ahead of most Cambridge factories of the period.

Although the glass works chimney and buildings were destroyed by 1921, other factories contemporary with them still exist in Cambridge. Both brick and wood were used for these early buildings. Some frame structures are still in use, generally as warehouses and storage lofts for companies that have outgrown them for manufacturing processes. Industrial fire hazards have caused brick and other fireproof buildings to predominate.

Among the earliest wooden factory buildings that survive today are probably the Albany Street buildings of the Latex Corporation. By 1854 employed as the carriage factory of J. C. Davenport and Company, they were later used by Allen, Endicott Building Company. Two stories high and originally arranged as a series of parallel rectangular buildings, each one has a fairly steeply pitched roof. Windows are large, simple openings, placed regularly in bays.

A later type of wooden factory building in the same complex on Albany Street was built about 1870. Three stories high, the roof has a much flatter pitch and the wide eaves characteristic of its architectural period. The windows are still simple, regularly arranged openings. Recently tin sheathing has been introduced as an attempt at fire protection, but originally no such provisions were made.

The most extensive wooden factory building is illustrated by the Barbour-Stockwell Iron Foundry at 205 Broadway. The main part of the factory, built about 1890, is three stories high with an almost flat roof. The windows, to introduce as much light as possible, are arranged in continuous horizontal bands across the main sides of the building. Interior supports are also wooden.

A typical early brick factory is one of the buildings of the Sealy Company on Second Street. It was built between 1873 and 1879 for the American Net and Wire Company. The main building is 3 1/2 stories high, still rectangular and has a pitched roof. Windows are simple and arranged regularly. At the front is a square four-story

tower, a typical feature of the mid-19th century factory. This one is pedimented and ornamental detail is introduced in brick around the windows and at the cornice. Although the shell is brick and fireproof, the interior construction is wood. A later and more fire-resistant development is illustrated by the extension of this building toward Third Street. This addition (circa 1905) is brick, three stories high, has an almost flat roof, and its window openings are grouped in bays. Otherwise the exterior is plain and architecturally uninteresting; within, for better fire protection and stronger construction, the posts and framing are steel. In more recent examples of this kind of construction, concrete blocks have been substituted for brick.

The introduction of concrete as a fireproof building material has had a major effect on the development of the factory building. Some early Cambridge examples of concrete construction are seen on Binney Street between Fifth and Sixth Streets. Built between 1910 and 1917, these factory buildings have concrete piers, beams, floors, and roof (which is now completely flat). Windows take the form of continuous horizontal bands between the vertical supports and the spandrels are filled with brick or fire-resistant tile.

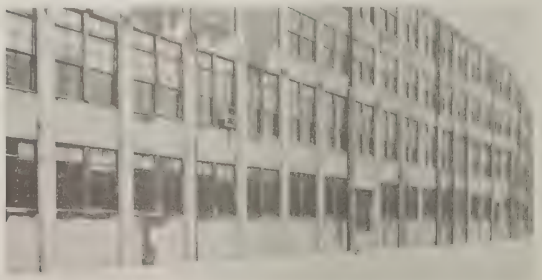
Cambridge factories have tended to remain relatively small in terms of area, but have grown vertically as new building materials have been introduced. There are many variations in construction and factory types, but these examples illustrate the broad trends of factory buildings in Cambridge.

119. BIRD'S EYE VIEW OF EAST CAMBRIDGE IN 1877.

120. BARBOUR-STOCKWELL FOUNDRY, 205 BROADWAY, c. 1890

121. AMERICAN NET AND WIRE FACTORY, SECOND ST., 1873-1879, NOW SEALY CO.

122. FACTORY, BINNEY ST. BETWEEN FIFTH AND SIXTH, c. 1910.



Cambridge Canals

From time to time in its history, Cambridge has sought to take advantage of its river side location by building canals to increase the usefulness of its commercial waterfront. These canals have met with varying success, and none of the surviving ones are used for their intended purpose.

The first canal was started when Cambridge was not a year old and was still the prospective capital of the Massachusetts government. On June 14th, 1631, the governor made this order:

> Mr. John Maisters hath undertaken to make a passage from Charles River to the Newe Towne, twelve foot broad and seven foot deep; for which the Court promiseth him satisfaction, according as the charges thereof shall amount unto.

Three weeks later it was "Ordered, that there shall be levied out of the several plantations the sum of thirty pounds, for the making of the creek at the Newe Towne."

This canal or creek was apparently the enlargement of a natural run of water rising near the town spring at present Brattle Square. In terms of modern Cambridge, it extended from Brattle Street, following the curve of Eliot Street (formerly called Greek Lane), crossed Boylston Street near South, and continued to the foot of Dunster Street, emptying into the Charles approximately between Eliot and Winthrop Houses. Presumably, the canal was to be used for shipping, although its usefulness would have been limited after the wharf was built beside it in 1652 and the causeway to the Great Bridge (now Boylston Street) was built over it in 1663. Over the years, it was filled in until by the 1850's only a fragment of it existed by College Wharf. Filled land on which Eliot and Winthrop Houses now stand covers the site completely.

In the latter part of the 18th century, two canals existed south of Cambridgeport. One, extending from Goffe's Cove to Brookline Street below Auburn, was opened by Judge Francis Dana in connection with a dike he and Leonard Jarvis built to keep salt water out of the marsh land they hoped to develop. The other, Jarvis built when he laid out Front Street (now Massachusetts Avenue below Lafayette Square). Both of these canals were cut through before 1797, the date of the agreement that mentions them, but they were never used extensively, and were completely filled in by 1895.

Although it did not cut through Cambridge land, a much more important canal commercially for the city was the Middlesex Canal which connected Boston with the Merrimack River. Built between 1793 and 1803 and operated until the 1840's, one-third of the members of the Canal company were also share holders in the project to develop Lechmere Point. Thus the early name, Canal Bridge, was given the bridge that the Lechmere Point Corporation built. Since the terminus of the Middlesex Canal was Miller's River on the north side of Lechmere Point (an area now almost completely filled in), it was especially important to the development of East Cambridge.

The Cambridgeport canal system was the most elaborate undertaken in the city and, beset by a number of problems beyond its proprietors' control, it was finally discontinued except for the greater part of Broad Canal. Some of this system was apparently projected as early as 1802, but it received its great impetus when, in 1805, an Act of Congress provided:

> that the town of landing-place of Cambridge in the State of Massachusetts shall be a port of delivery, to be annexed to the district of Boston and Charlestown, and shall be subject to the same regulations as other ports of delivery in the United States.

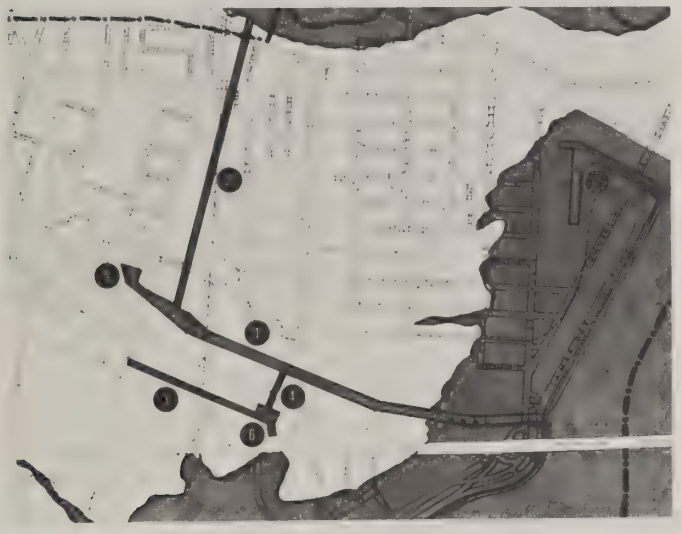
A group of men who had been buying up land in Cambridgeport laid out the course for the canal system and a plan of it was drawn up by Peter Tufts. The entire procedure is set forth in a long agreement between them dated July 8, 1806, and recorded in the Registry of Deeds.

In this agreement, the participants are described as "owners of the lands over and through which Canals and Docks are made or laid out to be made" and as holders in a "hundred share estate" in proportion to the amount of land they held: Rufus Davenport, 55 shares; Royal Makepeace, 25; Henry Hill, 2; Josiah Mason, Jr., 4; and Daniel Mason and Charles Clark each 3 shares. Davenport and Makepeace were the most important holders, Davenport supplying the capital and Makepeace the business acumen.

At first one canal was projected, the Broad Canal running from the Charles River to near Portland Street, Later other canals were added: North, South, and Cross Canals and South and West Docks. The area where the canals were built was the "Great Swamp" which had set rather rigid boundries on the earliest settlement of Cambridge. Some of it was included in the Lechmere and Bordman Farms, some was held in smaller lots by several people. Davenport, Makepeace and associates assembled the acreage between 1800 and 1805, the largest single purchase being the Bordman Farm in 1804.

In modern terms, this area extended from Main Street, east of Lafayette Square, to an irregular north boundary close to Binney and Potter Streets. Its western boundary was approximately along Portland Street, and it went east to the River, whose shoreline was then near Kendall Square.

The problem of the marsh was to be overcome, according to the agreement, by allowing the owners of the lots to use the earth dug



123. EAST CAMBRIDGE CANALS, RECONSTRUCTED.

1. BROAD CANAL.
2. NORTH CANAL.
3. SOUTH CANAL.
4. CROSS CANAL.
5. WEST DOCK.
6. SOUTH DOCK.
7. LECHMERE CANAL.

out to make the canals as fill. This was to be done in stages -- the southern side of Broad Canal in one year, the rest of the canals in three years -- to give all owners a chance to obtain equal amounts of fill. But as late as the 1854 city map, all land north of Broad Canal and bordering North Canal is indicated as marsh.

After describing the course each canal should take, the agreement sets down the pitch of the walls, where bridges were to be built, etc ..... The canals were to be common property, whose upkeep was to be paid for, on a proportional basis, by land holders whose property abutted them. In return, abuttors were to have the right "to use Vessells, Boats, Rafts & other things .... and to fasten them in one Tier or Rank or Row to wharves ...." which they could build along the canals. According to Paige's History of Cambridge, Davenport and Makepeace offered the land around the canals "for sale in small lots but were disappointed in the result."

As a commercial enterprise, the canals were almost completely a failure. Had the prosperity in which they were conceived continued, they would have been successful. But Jefferson's Embargo of 1807 to 1809 and the War of 1812 threw such restrictions on trade that there

124. BROAD CANAL LOOKING EAST.

was no need for the extensive shoreline that had just been built. Since the whole concept of Cambridgeport and the canals hinged on the sale of lots to accommodate extensive trade, the proprietors lost most of their investments. Makepeace was financially ruined, sold most of the lots he held, and moved to Baltimore in 1832. A large part of Davenport's lots reverted to Andrew Bordman in 1815 for non-payment of the mortgage.

Only a few wharves were built along the canals, and by the time there was a general recovery in the 1830's, the railroad had become a more efficient means of transportation than water. This fact was graphically illustrated in Cambridge when the Grand Junction (Boston and Albany) Railroad was built partly parallelling and partly occupying the position of North Canal.

Most of the land near the canals remained idle until the 1870's and 80's, when railroad-oriented industry, stimulated by the marsh reclamation of the East Cambridge Land Company, began to locate in areas of lower East Cambridge and Cambridgeport.

The earliest map which shows the canal system substantially as planned, is the 1838 Hayward survey. The earlier Hale's Map (1830), known to be inaccurate in a number of respects, shows only Broad Canal.

Broad Canal was contemplated, at least as early as 1802, when a deed from Makepeace and his earlier partner, Robert Vose, conveyed some land to Josiah Mason, Jr., at the eastern end of Main Street, with a right to use the "Canal which is to be made." Although a deed later in the same year describes land on the north side of the canal, Makepeace and his associates in 1804 bought from Walter Frost so much of a lot further west "as shall come in the course of a road and cannal ...."

As planned in 1806, Broad Canal was to be 80 feet wide (which it still is) and it ran parallel Main, Broadway, and Hampshire Streets as far as Portland Street, the course it still takes, although it has been shortened at the end nearest Portland Street and extended at the end near the river as additional land was filled in. The sides of the canal were intended to take a series of slopes, steep at the top and shallow at the base, but this apparently proved unsatisfactory in marshy areas and the sides are lined by stone walls today. The stone work varies in different lengths of the canal, suggesting that the walls were not all built at the same time.

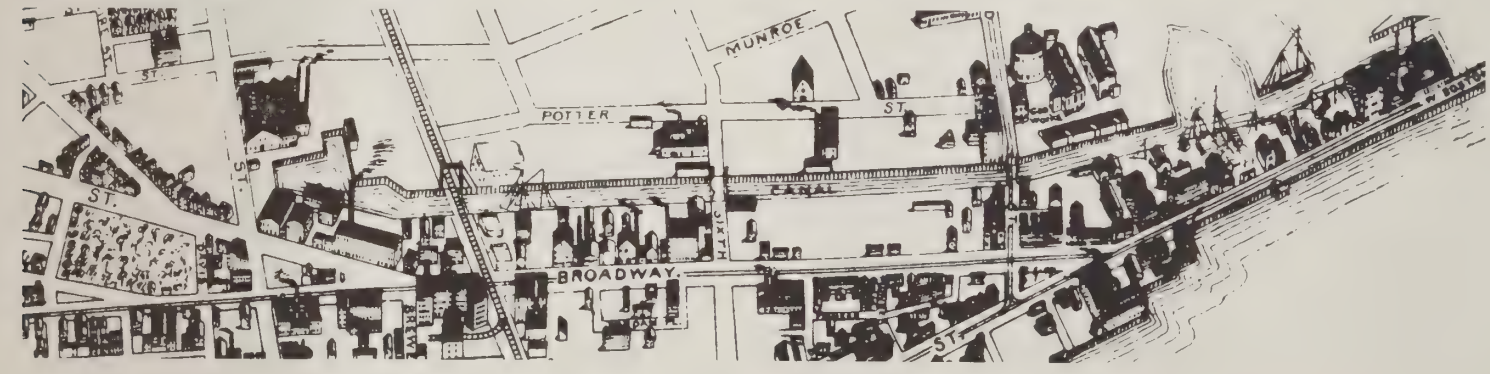
Although Makepeace still owned most of the land along Broad Canal until 1827, it was the most used part of the canal system, and it provided access to several coal and lumber yards. At least two wharves were built on it: Josiah Mason's at the original line of the river (east of Third Street) and William Fisk's "Stone Wharf" just west of Cross Canal (now Sixth Street). Today a major industry, the Boston Woven Hose and Rubber Company, still uses the canal as a useful supply of industrial water if not for transportation. Old bird's-eye views of the city and of the Woven Hose plant show flat boats with sails at various positions along the canal.

In 1879 the East Cambridge Land Company petitioned the heirs of Makepeace and the others to fill in Broad Canal which, until the bridges at First, Third and Sixth Streets were devised, formed an obstacle to real estate development in the area. The prayer of the petition was denied. Little by little, however, the canal beds were filled and few traces are left beyond a portion of Broad Canal.

At the end of Broad Canal was West Dock, essentially a triangular basin some 180 feet across which was supposed to be surrounded by docks. Its sides paralleled Webster Avenue, Portland and Bristol Streets. Paige guesses that it was "designed as the head of navigation and a central point of business." Land around it was laid out in parcels 20 feet wide "apparently designed for stores and warehouses", but Royal Makepeace was unable to sell the lots until 1823, when he sold them and others to John Lowell, Jr. for $500. The Lowell heirs sold to Isaac Lum at a reduced price in 1838. Lum built dwelling houses on some lots and sold others. In the plans taken to settle his estate in 1857, the boundaries of the lots are very irregular, with fences actually out in the dock area. Part of it is said to have served as a cock-fighting pit before it was filled in. According to Paige, West Dock completely disappeared in the 1860's and 70's. A drawbridge on Portland Street was situated at the entrance to the basin.

North Canal, as first planned, extended only to about Binney Street from Broad Canal, ran parallel to Portland Street, and was 60 feet wide. In 1811 it was agreed, between the Lechmere Point Corporation and Davenport and Makepeace, to extend it north to Miller's River. Due to the marshy land through which it was cut, the banks of North Canal were never built up, and old maps show it in slightly differing positions and of varying widths. The part near Miller's River was a natural creek.

125. BIRD'S EYE VIEW OF BROAD CANAL, DETAIL OF 1877 MAP.



Rufus Davenport mortgaged the land around it to Newell Bent in 1826 and Bent took possession in 1828 for non-payment. His heirs sold to Dr. Estes Howe, who sold to the East Cambridge Land Company in 1869. The actual canal remained in the common possession of heirs of the original share-holders until 1880, when it was partitioned, sold, and filled in.

126. LECHMERE CANAL LOOKING WEST.

127. VIEW OF BROAD CANAL AND BEACON HILL.

The site of North Canal is now marked by the Grand Junction Railroad, which very nearly follows its course, although for a while (in the 1850's to the 80's) both existed together.

The rest of the canal system was on the south side of Broadway. It was connected to Broad Canal by Cross Canal, which was 30 feet wide and was spanned at Broadway by a drawbridge. It was filled in 1873 when the level of the marsh land was raised to continue Sixth Street through to Main Street. Sixth Street, between Broad Canal and Main Street, occupies the exact site of this part of the canal system.

Cross Canal led into South Dock, whose purpose was similar to that of West Dock. South Dock also had a water connection to the Charles under Main Street at a point called "Little Bridge", which was filled in about 1850 when the dock was reduced in size.

From South Dock there extended South Canal, 60 feet wide, from present Sixth Street to Davis Street, halfway between Broadway and Harvard Street. Newell Bent, William Fisk, and his partner, Aaron Rice bought up large land holdings around South Dock and South Canal, but little of this area was built on either. In plans taken to settle the Bent estate in 1863 the lines of the Dock and Canal had become irregular, and parts of the canal bed, near the railroad, were partitioned off to be sold as lots.

South Dock was obliterated in 1873 when the grade was increased to accommodate Sixth Street. South Canal, useless after that, was eventually filled in also. Nothing remains of it today except Jordan Place, which was originally reserved as a right of way access to it.

The most recent of the canals in Cambridge is Lechmere Canal. Instead of being a purposely dug canal, it is part of the former shoreline that was not filled in when the First Street - Commercial Avenue area was reclaimed in the late 1890's. In 1900, John T. Scully, the owner of the shore area and flats through which it was made, was given license to construct bulkheads to form the walls of the canal prior to filling in the land around it. The canal was angular in shape, parallelling Bridge Street to a set of docks near First Street, then turning and parallelling First Street south to Bent. Its north side was formerly stone docks which had to be repaired and reinforced with wood piling before the channel could be dredged and the sides properly sloped; the newer southern sides were also completed in stone of similar construction. Lechmere Canal was useful as long as water-oriented lumber, coal, and stone yards were located along it. Recently, however, to accommodate business expansion and parking lots, the part parallel to First Street has been entirely filled in.

Of the canals left -- Broad and Lechmere -- Broad is the more interesting, dating, as it does, from the early years of the 19th century, when canals were thought to be the great solution to transportation problems. It is almost the only relic left to tell that Cambridge once promised to be an important maritime port. Yet it is not a useless relic, for it is still in daily use by at least one of the industries located along it. Visually, it is one of the things that make Cambridge interesting.

128. BROAD CANAL LOOKING WEST.

Residential Architecture

Nearly all East Cambridge houses date from the nineteenth century, principally from the years 1820 to 1875. During this period American architecture underwent a bewildering variety of styles, but beneath the stylistic trappings the building tradition remained conservative. In East Cambridge there were only three basic house types, all three survivals from the eighteenth century. An understanding of these types and the various ways they were used helps to clarify the stylistic picture.

Basic House Types

The three principal house types at the beginning of the nineteenth century, when East Cambridge began to develop, were a four-room center-hall plan (Type A), a two-room center-hall plan (Type B), and a side-hall plan (Type C).

Type A was a continuation of the large eighteenth-century Georgian house, variations of which were built all along the Eastern seaboard. Four-square and box-like in mass, this house was rigidly formal both inside and out, a heritage of the English Palladian tradition. The facade, oriented about a central, axial entrance, had five openings per floor (center door and four windows on the first floor, five windows on each of the upper floors). The plan consisted of four more or less square rooms per floor -- two on each side of the center stair hall, which extended to the back of the house. Fireplaces were either on the outside wall (in which case there were four chimneys) or on the partition between the rooms (two chimneys). Sometimes there were subsidiary wings to the side or rear, served by their own chimneys.

Type B, also surviving from the eighteenth century, was a smaller version of the center-hall plan. It can be seen as a halving of the four-room model parallel to the front elevation; the same symmetrical five-opening facade was there, but the house was only one room deep. The stairway in the entrance hall generally had three runs (two changes in direction), so that it could fit into the relatively confined space. The two principal rooms (each with a fireplace on the rear wall) flanked the entrance hall, and an ell to the side or rear took care of services.

Type C can also be seen as a halving of the four-room center-hall plan, this time with the division made perpendicular to the front elevation. Originally it was exclusively an urban type -- the standard town house of Georgian London, transplanted to the colonies. The facade had three openings per floor: a door and two windows on the

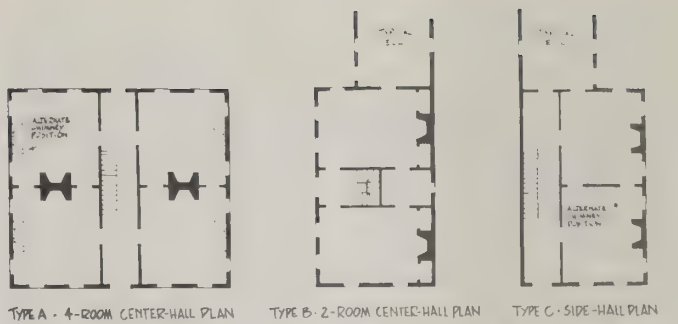
first floor, three windows on each of the upper floors. The entrance at the side of the facade led into a long stair hall, off which opened the two principal rooms. Either there was a chimney between these two rooms (providing each with a fireplace) or there were two chimneys on the outside wall. Nearly always there was an ell to the rear.

The free-standing four-room center-hall house (Type A) was the most coveted type, but it was large and expensive to build, and few were actually built in East Cambridge. It remained the ideal, however, inspiring numerous groupings of the other two types in pairs and rows.

Type B houses in East Cambridge were nearly always built with the narrow end to the street and with the symmetrical organized entrance facade along the side of the lot. The earlier examples (from the 1820's) often had low hip roofs, but gable roofs were used increasingly (and eventually exclusively). The type was at its apogee in America in the Late Georgian or Federal period; by the 1830's and 40's it was used only for the most vernacular examples. Thus, Type B houses in East Cambridge are the smallest, least architectural of all the types. The small, free-standing, end-to-street version of the type has been dubbed in this report the "worker's cottage", because it is so ubiquitous in East Cambridge and because it represents the simplest level of single-family housing during the first half of the century. Whole series of these worker's cottages still exist, punctuating the streetscape with their jagged silhouettes (varying in height from one-and-a-half to three stories).

Type B adapted itself particularly well to use in a double house. The two halves were placed back to back, with entrances on the long, side facades and with party-wall chimneys rising up in the center; the roof was nearly always a gable with its end facing the street. The type was not suited for use as a row house, except at the ends of rows, where the entrance could be around the corner.

The side-hall house (Type C) was the most prevalent type in East Cambridge, as well as the most interesting and varied. It was built free-standing, doubly, and in rows, nearly always two and a half stories in height. In the 20's the type had a gable roof with its eave line to the street and with a single dormer in the center. In the Greek Revival period (beginning in the 30's) the roof was turned so that the gable end faced the street; the single dormer became a single window in the pediment. The earlier three-opening facade survived, but as the century progressed a bay window was frequently substituted for the two first-story windows. The bracketed cornice became prevalent, and later the mansard roof appeared. Despite these stylistic modifications, the type itself hardly changed. The

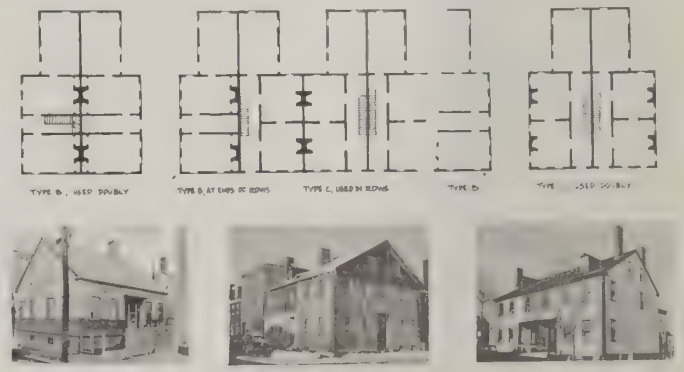


129. BASIC HOUSE TYPES.

130. TYPE A, 467 CAMBRIDGE ST.

131. TYPE B, 146 THORNDIKE ST.

132. TYPE C, 318 HURLEY ST.



133. COMBINATIONS OF BASIC HOUSE TYPES.

134. DOUBLE TYPE B, 26 SCIARAPPA ST.

135. TYPE B AND C, THIRD AND GORE STS.

136. DOUBLE TYPE C, 81-83 OTIS ST.

scale increased, and occasionally a single large parlor was substituted for the traditional two square rooms; otherwise, the general use and arrangement remained the same.

Near the beginning of the century, in line with its eighteenth-century (and earlier) urban origins, Type C was most frequently used as a row house. Later in the century there was a tendency toward greater isolation of individual units; thus the double house and especially the detached house with gable end to street became most prevalent. Detached side-hall houses of Late Georgian style, with their gable flank to the street and their square, boxy effect, looked like row houses cut off from their neighbors; when the Greek Revival brought about a re-orientation of the roof profile so that the gable end faced the street, the type fared much better in detached form.

Double houses nearly always had their doorways together in the center, their chimneys on the side walls, and the flank of the gable roof toward the street. This configuration was followed both for practical reasons (it was hard to subsume two houses under a single gable-end-to-street roof) and for aesthetic reasons (two small side-hall houses, when so grouped, looked like the large, symmetrical center-hall type). Occasionally two side-hall houses were given a gable-end-to-street roof, but the resulting pediment was generally so high as to appear awkward and ungainly.

When used as a row house, the side-hall plan of necessity had its gable flank toward the street, so that the roofs of the adjoining houses would line up. Dormers (generally one per house) and chimneys (generally shared by adjacent houses) punctuated the roofline at regular intervals. Adjoining houses either were paired (with shared doorways, chimneys, and rear ells) or were simply lined up next to each other with the same relative position of doors, windows, and other features.

The two most common East Cambridge house types, therefore, were Type C, the side-hall plan (used singly, doubly, and in rows), and Type B, the two-room center-hall plan (used singly, doubly, and occasionally at the ends of rows), with Type A, the four-room center-hall plan, making itself felt in the background. Stylistic changes had little effect on the use and arrangement of these plans. They arose from eighteenth-century prototypes and were predicated on the ideal of every man in his own house (even if that house were attached to its neighbors). The first really important housing change in East Cambridge came with the development of the flat, when living units began to be divided horizontally rather than vertically. Gradual rather than sudden, this changeover was more or less complete by the later 1870's. Few single-family houses, large or small, were built in East Cambridge after 1880.

Evolution of the Flat

Just as the principal nineteenth-century house types evolved out of eighteenth-century prototypes, so the housing of the later nineteenth century evolved out of the types already established. The difference was the horizontal as well as vertical division between living units. For example, a gable-end-to-street side-hall-plan house would have one family living on the first floor and another on the upper two. At first, presumably, such arrangements resulted from the division of already existing single-family houses, but eventually houses were built with the division in mind from the start.

137. TRIPLE DECKER, 1667 CAMBRIDGE ST., 1896.

Considering the different requirements of one-floor living compared with living on two or more floors, surprisingly little difference exists between single-family houses subsequently subdivided and houses planned for two or more families from the start. The building tradition was conservative, and the single-family house remained the ideal. The same floor plans (repeated on each floor) were followed; the only difference lay in the use of the rooms. A side-hall house

would still have two large square rooms off the hall and two or more smaller rooms in the ell; the front room would be used as a bedroom, the second room as a parlor or bedroom, and the first room in the ell as the kitchen, and the subsequent room or rooms as bedrooms. There were no bathrooms at this stage, as to a certain extent there still are none in East Cambridge. Circulation was poor, since rooms had to be passed through to get to other rooms.

Houses were at first divided so that one family had the first floor and another the second floor and attic. The mansard roof, which provided full ceiling height on the top floor, made possible a three-fold division -- one family on each of the three floors. From there it was only a short step to the familiar triple decker, which became the standard low-cost housing type of the last fifteen years of the century.

Even the triple-decker, designed from the start as a three-family house, was related to the old house types in both plan and elevation. The standard triple-decker is nothing but an evolved form of the side-hall plan house; it was even built in the same combinations: singly, doubly, and occasionally also in rows. The plan, admittedly, was adjusted somewhat: stairs were squeezed in at the side so that the long internal hall could be private to each flat rather than being a means of circulation for the whole building; single triple-deckers (the most common type) could thus have rooms on both sides of the hall. But the old arrangement still shows through, especially in the survival of the two more or less square principal rooms, now invariably with bay windows. The front room was used as the parlor, the second as master bedroom; behind were dining room and kitchen.

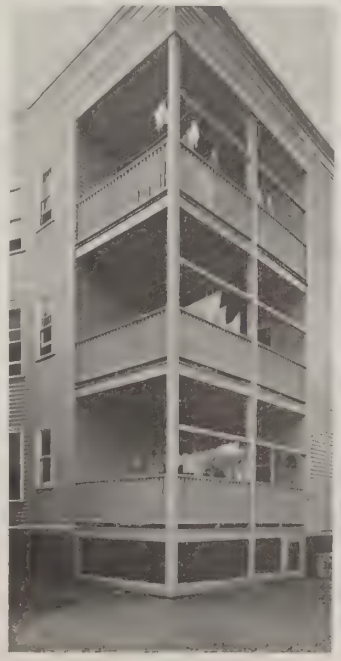
Triple-deckers at least had some pretensions to architectural form and style. They were built with bay windows and entrance porches, and some of them had fairly elaborate coatings of Queen Anne or Colonial Revival trim, in vogue at the time (1885-1900). Tenements, however, the lowest rung of the housing ladder, had no such pretensions. Built with flat fronts, flat roofs, and an utter lack of ornament, in an age when the picturesque was highly valued, they housed the masses with the barest minimum of standards. East Cambridge is fortunate in having few real tenements, because existing housing could be converted to satisfy changing needs. Indeed, the story of East Cambridge housing in the twentieth century is the story of the conversion of earlier buildings to multi-family use. Since, however, the changes that were made were for the most part made internally, East Cambridge still presents the aspect of a nineteenth-century residential quarter. And underneath the variety of surfaces, ornament, roof types, and orientations, the few standard nineteenth-century house types can nearly always be discerned.

a. ENTRANCE.

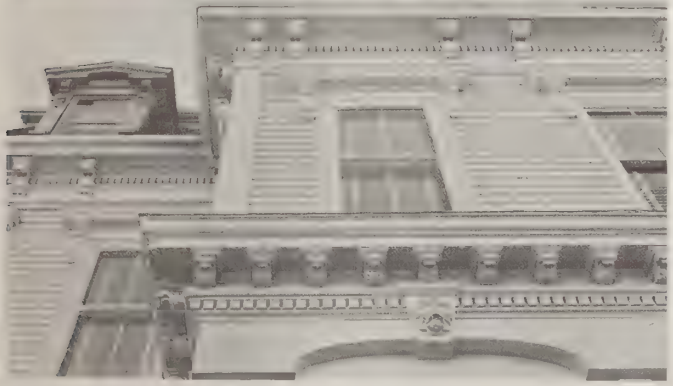
b. DETAIL OF CORNICE.

138. 1667 CAMBRIDGE ST., DETAILS.

c. REAR PORCHES.



d. INTERIOR, NEWEL POST.



Two Factors for Variety in Architectural Style

Despite the limited repertoire of house plans just analyzed and similarities in construction to be touched on later, the dwellings in East Cambridge vary considerably in external appearance. This variety in architectural style is caused by two factors: differences in decorative detail (the skin of architectural ornamentation which overlays the building) and changes in the basic proportions and mass of the structure itself. Decorative detail and materials change markedly from decade to decade, and they are matters to which the nineteenth century critic paid great attention. Such factors are easy to identify and much of the analysis which follows will be devoted to the distinctive decorative vocabulary of each period. But the changes in massing that went on under the decorative overlay is even more important, and one must never lose sight of its steady evolution. The fundamental change can quickly be described here though a more detailed analysis of the steps by which the change was achieved will follow under the separate descriptions of each architectural style.

The sixty years between 1825 and 1885 witness significant changes in the way the mass of a building is handled. In Late Georgian or Federal times the building constituted a compact, simple mass. No superfluous ornamentation around window or doors interrupted the sheer plane of the facade: a simple, crisp cornice marked the intersection of walls and roof surfaces; the hip or ridge roof enhanced the clear, regular geometric shapes of the structure. There was a calm, aloof feeling about such a composition. Then, beginning in the 1830's and continuing to a climax in the Queen Anne style about 1885, a gradual change took place as proportions loomed taller, as the buildings' silhouette became more broken and assertive, and as the early compact and simple geometry dissolved into an array of complex and competing shapes or disintegrated into areas of surface decoration. Over the years the plane of the wall lost its importance as walls became charged with heavy, three-dimensional appendages like porches, bay windows or boldly-projecting bracketed cornices, and as heavy frames around doors and windows emphasized the opening rather than the wall surface.

139. 262-266 CAMBRIDGE ST.

140. 34-46 SECOND ST., 1842.

141. 390-392 CAMBRIDGE ST.

BUILDING CONSTRUCTION DATES
BEFORE 1830
1830 1854
1854 1873
POST'73
POST '73 INDUSTRIAL
WINTER
ST
STREET
FIRST
SECOND
THIRD
STREET
GORE
SCIARAPPA
STREET
CAMBRIDGE
FIFTH
SIXTH
OTIS
STREET
SEVENTH
EIGHTH
FULKERSON
THORNDIKE
STREET
STREET
STREET
STREET
STREET
STREET
SPRING
STREET
STREET
HURLEY
STREET
STREET
CHARLES

Late Georgian or Federal Architecture

East Cambridge has a number of good Late Georgian residences. Some of these date from the late 1820's (see the inventory of buildings in East Cambridge appearing on Hale's 1830 map, p. 91), but quite a few were constructed after 1830. All are relatively modest in scale and, when compared with Charles Bulfinch's work on Beacon Hill that dates between 1796 and 1806, it is clear that East Cambridge constitutes a rear guard of the Federal movement.

In a district where living accommodations were modest, central hall houses (Type A) are unusual. One example occurs at 467 Cambridge Street where it has been hidden behind a later block of stores. Built in 1824-25, the main entrance has sidelights and a customary if somewhat clumsy elliptical fan. There are good but simple Federal fireplaces in both first and second floor rooms.

The area's most striking Late Georgian buildings are all Type C (side hall plan) and built of brick: a substantial town house at 59 Thorndike Street (1827), a medium size row house at 26 Second Street (1831), a six house row at 202-214 Third Street (1826), and

142. 467 CAMBRIDGE ST., 1824.

143. FRONT DOOR.

144. FIRE PLACE.

145. 59 THORNDIKE ST., 1827.

46. 26 SECOND ST., 1831.

a simple dwelling with brick ends but wooden flanks at 96 Thorndike Street (1826). In these examples the familiar sheer plane of the facade controls the design, and the attenuation and refinement characteristic of the Federal style is evident. The main cornice is created by the slight projection of a few rows of brick, one course of which is set at an angle or indented in a manner that recalls a dentil course. Foundations are of granite blocks, but most of the flush lintels are brownstone. Brick used for the facing have a somewhat coarser texture and a more red-brown color than the smooth-faced, salmon-colored pressed brick used in the fifties, and it is slightly larger in dimensions (7 3/8 x 3 1/2 x 2 1/8) than the common brick used elsewhere in the house. (Present day brick are 8 x 3 3/4 x 2 1/4.) The facing is laid with regular stretchers and alarmingly few headers to tie to the common brick core. Mortar joints for both the face and common brick masonry are fairly thin (3/16 inch), but the joints are not as thin nor are the brick laid quite as regularly as will be the case in the 1850's and 1860's.

The simple, flat, rectangular quality of the facade is only relieved by the elliptical brick arch that opens into the recessed entrance porch. The main door is flanked by side lights and capped by a rectangular top light as wide as the door and side lights together. On the inside, the finish of brick houses is no different from wooden dwellings of similar date.

147. 96 THORNDIKE ST., 1826.

148. 266 CAMBRIDGE ST., 1830, DOORWAY.

Late Georgian houses of wood construction also utilize a light cornice to mark the intersection of the facade and sloping roof. Here the cornice projects a bare four inches, but it is augmented by a wooden rain trough which turns each end of the facade. Another striking feature of these wooden houses, and one that may be traced back to eighteenth century usage, is the way the upper story window caps fit tightly against the eaves. Sometimes the wooden moldings that support the cornice are interrupted by the window opening; at other times that molding is broken forward over the window frame. Gable ends are close-cropped, the gable being finished with a crown molding on the raking cornice that is canted out from the wall as much as three inches. These light but nicely scaled cornices emphasize the geometric content of the building mass.

149. LATE GEORGIAN CORNICE AND WINDOW DETAIL.

Most Late Georgian wooden houses in East Cambridge are more modest than the examples just mentioned. Very common is the so called "worker's cottage," a long, narrow edifice set with the narrow end (twelve to sixteen feet wide) to the street and the entrance on one side. Built in East Cambridge between 1820 and 1870, though used elsewhere much earlier, this house type can be capped with a hip roof, which seems to be the earliest form (86 Gore Street, 1821), with a gabled roof (124 Thorndike Street, 1843) or a flat roof (11 Eighth Street, 1870). (Some of the other flat roofed examples may be the result of later alterations). The gabled worker's cottage is probably the most prevalent single house type to be found in the whole of Cambridge, and it can be found in 1, 1 1/2, 2 or 2 1/2 story heights. When placed on the rear of a lot, these cottages are usually set long side toward the street and they then resemble a center hall house. Whatever its orientation, the cottage always has a service wing and thus provides three fair-sized rooms plus the hall on each floor.

The chimney stacks of the cottage's two separate fireplaces are thinner than the large central chimney of some side hall houses. The somewhat unusual position of the thin chimneys of the cottage, rising

150. 86 GORE ST., 1821.

151. 124 THORNDIKE ST., 1843.

152. 11 EIGHTH ST., 1870.

as they do near the eave line on the rear wall of the building, is one of the most characteristic exterior features of the type. Although many have been remodeled, the original entrance treatment of the cottage always contained a door with side lights. The door jambs are occasionally treated as thin pilasters but more often they are left undecorated; the door frame is capped by a very simple cornice. This entrance composition is basically the same one that later Greek Revival carpenters will use on a much heavier scale and with broader moldings. Windows were originally filled with 6/6 sash and equipped with exterior shutters, but these elements have generally been changed.

Within, architectural attention centers upon two features -- stairway and fireplaces. A number of dwellings built after 1830 have handsome black marble mantel pieces that follow a more or less standard design based on a simple panel and lintel scheme. Among the wooden mantel pieces there is somewhat more variety. Except for the degree of elaboration, mantels in both worker's cottages and more expensive dwellings were made in the same way by employing different combinations of the elegantly scaled moldings then in common use. Thus the parlor and dining room mantel pieces at 86 Gore Street (1821),

153. ENTRANCE DOORWAY, 98 SPRING ST., 1840. — 154. WINDOW FRAME, 94 BRATTLE ST.

which are among the few that survive, resemble those found in bedrooms of the more elaborate house at 469 Cambridge Street (1824). Similarly the banister details of a cottage stair are virtually identical with the back stairs of the large row house at 46 Second Street (1843). Both have plain round, one-inch balusters and a turned three-inch newel post of elegant simplicity. The plan of the cottage stair, however, is distinct. Cramped into the eight or nine foot width of the front hall, its large runs (flights) double back to form a U-shape very much in the manner of chimney stairs in seventeenth century New England houses. By thus cramping the stairs into a minimum space, a small area at the rear of the hall is saved for an auxiliary room (or large closet) on each floor. This room is lighted by a small window, the only opening cut in the cottage's rear wall. In exceptional (and later) instances the whole center of the cottage is given over to the stair hall, a solution which permits the more familiar straight (single run) flight or stairs but eliminates the auxiliary room.

Earlier, when describing the general character of Federal building, the absence of panelled walls and over-mantels was noted. In East Cambridge the only interior wall decoration is the chair rail running around the room which is designed to continue the height and profile of the window sills. Instead of panelling on the fireplace wall, worker's cottages generally place two shallow closets on either side of the chimney breast. To secure greater depth these closets usually project slightly in front of the mantel. The symmetrical placement of closet doors corresponds to that of the windows on the opposite wall and imparts a certain formality to the apartment. Interior door and window trim derive a lightness and elegance from the common moldings then in use. Interior doors are usually fairly thin, 1 1/8 inch. Important doors are divided into six countersunk panels but doors of unimportant rooms often have just four panels in which the face on one side is set flush with the door rails and stiles.

Windows or worker's cottages employ simple double-hung sash. Although fine structures of the period built elsewhere often use triple-hung sash or floor-length windows, this feature does not occur in East Cambridge until later. Most of the original sash have been replaced, but a few old windows remain, generally in the attic. In these glass panes are approximately 9 x 12 inches, about as large in size as it was then convenient to make sheets of glass. Sash with medium-sized panes continued to be used until the early 1850's when it became possible to manufacture sheets of glass 15 inches wide. At that time the characteristic two-light sash makes its appearance.

The last characteristic to be mentioned concerns the heavy wooden framing which can still be seen in the area's Late Georgian houses. In origin this method of supporting a wooden building by a heavy

framework of vertical posts and horizontal plates, girts, and sills goes back to the seventeenth century. By the 1820's and 30's framing members were smaller and framing methods simpler, but traces of the old system can still be seen in the corner posts in almost all of the early wooden houses of the area. By this time, however, some of the plates and girts had been concealed by a dropped plaster ceiling. At 469 Cambridge Street (1824), for example, heavy horizontal beams (plates) can only be observed projecting below the ceiling of the second story (but not of the first) on both the front and rear walls. These beams, supported by four upright posts in the front and back walls, occur at such a height as to carry the third floor joists as well as the rafters of the roof. As no other large bracing members are evident on the side walls or in the center of the house, it appears that the builders felt confident that the longitudinal walls would provide the necessary cross bracing.

Traditionally the wall surfaces that filled the area between the larger framing timbers were constructed in two ways. One system employed studs of varying sizes (but much heavier than the 2 x 4's in common use today) which were placed with the narrow dimension in the thickness of the wall. With this arrangement the wall was apt to be slightly thinner than the present-day six-inch stud wall, and the space between the studs could be filled with a non-structural insulating material while interior plaster was supported by split lathing nailed to the studs. The second system employed vertical boarding (1 to 1 1/2 inch thick boards which ran between the large horizontal girts and sills). Exterior siding and interior lath was nailed directly to these vertical boards. Such construction provided walls as thin as 3 1/4 or 3 1/2 inches, and this caused window frames to project as much as 1-3/4 inches beyond the outside face of the wall. If the outside walls of these early houses have not been overlaid with later layers of sheathing, projecting window frames form a distinctive feature of the house. Both wall systems are employed in East Cambridge though stud construction dominates. 469 Cambridge Street (1824) uses studding for exterior walls but employs vertical boarding for interior partitions. About 1840 stud wall construction became general.

155. LATE GEORGIAN HOUSE, 98-100 SPRING ST.

156. GREEK REVIVAL HOUSES, CORNER OF SPRING AND SCIARAPPA STS.

The Greek Revival

The Greek Revival is what one remembers about East Cambridge. The preferred style of home builders when the district was in its heyday, Greek Revival architecture is notable in East Cambridge for its variety and good quality as well as for its numbers. Although liberally sprinkled with earlier and later styles, streets such as Thorndike and Spring are essentially Greek Revival in character, and the houses that line them demonstrate the great versatility that exists within the style. Rows of town houses mingle with single houses, double houses and simple cottages, brick with wood, expensive with modest; but each has an innate dignity that arouses admiration in the critic. In date, these Greek houses fall between 1840 and 1855, but when it is recalled that leading architects of Boston and elsewhere were using the style by 1820, it is clear, as with Late Georgian examples, that work in East Cambridge was not epoch making. The nameless carpenter builders accomplished what they did by reusing architectural forms that had already entered the public domain of vernacular architecture -- a process that we have witnessed from the eighteenth century and which is still going on today. And although there is evidence of great ingenuity in the way the various parts are put together, almost all of the wooden trim and decorative forms that they used were standard and available commercially. An industrial society was rapidly approaching.

When compared to Late Georgian building, it is apparent that the Greek Revival in East Cambridge introduced little new in the way of planning or construction. The single house side hall plan which

157. PROJECTING EAVES, GREEK REVIVAL HOUSE, 98 SCIARAPPA ST.

158. 93 OTIS ST., 1842.

159. 67-75 SPRING ST., 1843.

becomes so prevalent in Greek Revival times, does not differ essentially from the long-used row house plan. In East Cambridge, at least, Greek houses are usually larger and more elaborate than Late Georgian examples found there. A condition that has nothing to do with architectural style, it simply reflects the fact that the character of the district by the 1840's was more securely established than it had been in the 20's and that owners felt safe in making larger investments in the structures they erected there. The over-all character of East Cambridge also began to change at that time. Instead of an open, country-like environment, the area began to assume the air of a close-built residential neighborhood with houses set on 50 to 75 foot lots.

In appearance a Greek Revival house varies noticeably from Late Georgian. A heavier, more plastic quality results from the strongly projecting eaves; the gable trim extends further in front of the walls; the house is apt to have a projecting front or side porch; wall surfaces are animated with an overlay of decorative features like pilasters, entablatures, door and window frames. Proportions of the house mass and the roof slope do not change noticeably from Late Georgian buildings in the neighborhood, but the earlier hip roof inevitably yields to a gable commonly treated as a Classical pediment. The scale of the ornamentation is heavier than before just as it is more three-dimensional.

The main facade of a Greek Revival house is enlivened by a quantity of applied ornamentation remotely derived from Greek architecture but entirely Yankee in material, the manner in which it was produced, and the way it was used. The eave line, that architecturally important juncture between the vertical plane of the facade and sloping roof, is generally treated as a complete Classical entablature. In wooden houses projecting eaves are boxed in to form a cornice and two wide horizontal boards below the cornice serve as the frieze and architrave. Never decorated, these boards are lapped or separated by a narrow molding, and they usually project one or two inches in front of the regular siding.

As no house in East Cambridge is ambitious enough for a free standing portico, that element is recalled by the gable end of the house and the corner pilasters. Nothing betrays the naivité of the Yankee designer more than his use of this feature. At times more or less correct (using one pilaster for each bay of the composition, as at 93 Otis Street, 1842), he more often reserves the feature for each corner of the facade thus leaving the whole middle section of his composition theoretically unsupported. Pilaster caps are usually built up of stock wooden moldings. Never fluted, the pilasters themselves are nothing more than broad boards run vertically. Sometimes they are given a

paneled effect by applying a two or three-inch nailing strip along their edges. As the entablatures, they are set slightly in advance of the wall surface. The pilaster often runs into trouble when a porch or elaborate entrance frame is also used because there is not enough wall surface to include all features without crowding. At such times one of the members may be lost in the confusion. Notwithstanding such design difficulties, the pilaster imparts a certain scale and character to the house, and nothing reduces one of these buildings to anonymity more quickly than the removal of pilasters and capitals in an attempted modernization.

Greek Revival entrances employ the same rectangular front door compositions with side and top lights that were used in the neighborhood's Late Georgian vernacular. In masonry buildings, however, the earlier elliptical arch of the entrance is replaced by an ample brownstone lintel. (Compare 262-266 Cambridge Street, 1831, fig. 139, with 55-61 Otis Street, 1851). Windows continue to use the same 9 x 12 glass panes, but exterior frames of the windows of wooden houses are wider and often designed with crossettes (corner projections that emphasize the lintel). Exterior shutters continue in use.

But despite its many similarities to Late Georgian, the Greek Revival is evidence of the beginning of a new spirit in American architecture -- a certain restless and assertive feeling. Instead of remaining content to repeat standard Federal dwellings with their ever so exquisite details, the designer begins to demand more conspicuous "show"; he searches for variety; he deliberately seeks after "effects." All the time, however, he must express himself within a still limited range of familiar house plans and shapes and a restricted decorative vocabulary. The Greek Revival period, therefore, is a pivotal, transitional period, and it is intriguing to watch the interplay of a fixed repertoire of forms and correct Classical detailing on the one hand and the new spirit of experiment and expressiveness on the other.

One aid to attaining the new expressiveness was the presence of mass-produced ornamentation which now existed in much greater quantities than heretofore. By means of this, the vernacular builder could easily add a flourish and a note of "style" to his building. As always, this embellishment was largely a matter of selection rather than creation, but the range of things from which to select was larger than before. In earlier periods, for example, houses as modest as 80 Sciarappa Street would probably not have been provided with a balcony, but by 1848 cast iron balconies were within a modest budget. Entrance or side porches abound in Cambridge's Greek Revival houses and they are constructed with fluted columns and intricately formed capitals which could only have been used earlier in the most expensive work. Hollow core columns ten feet in length for example,

160. 55-61 OTIS ST., 1851.

161. MOLDED DECORATION, ENTRANCE LOBBY, 68 OTIS ST., 1846.

were priced in James Gallier's Price Book and Estimator of 1833 at $3.60. In a deteriorated specimen one can observe the ingenious way in which Classical capitals were assembled from individual pieces of wood that had previously been machine cut. Bas relief decoration exists in quantity, but this was often made from "London Putty" which could be formed in a mold. When hardened, glued in place, and painted, such molded decoration can scarcely be distinguished from expensive, hand-carved work. This form of decoration is used on both the exterior and interior of houses. 66-68 Otis Street (1846) has a good deal of this ornamentation on the entrance porches, as well as for the brackets that support the cornice of the main entrance, and for the window decoration on the facade. That this material has lasted for a century shows that it was durable, and the present facade is all the poorer for having been stripped of much of its original decoration.

162. 55-61 OTIS ST., 1851.

163. 34-46 SECOND ST., 1842.

As for building materials, masonry Greek Revival houses in East Cambridge manifest a preference for granite foundations, brownstone lintels, and pressed brick facades. The pressed brick is more salmon-colored, harder-surfaced, and sharper-edged than the common brick used for other walls. Brick joints are thin (about 3/16 inch), raked, and the mortar was purposely darkened with lampblack. (Modern pointing with white mortar changes the character of the wall entirely). Wooden houses employ foundations of granite slabs or ashlar slate. While most walls of wood have regular lapped siding, flush siding is sometimes used for facades. This finish was known to Federal builders but in East Cambridge they had used it exclusively for recessed porches. Slate continues to be the principal roofing material.

All row houses, as we saw earlier, follow the same fundamental plan: one that is three bays wide and uses a side hall with a stair. Two rooms deep, it may or may not have an ell. Any variety that exists in row house design results from the building material, the height to which it is carried, and the degree of decorative elaboration that is allowed. 55-61 Otis Street is one of the most striking groups of houses in East Cambridge. Its date of 1851 is significant as the same house could have been built on Louisburg Square twenty years earlier. If there was an architect his name is not important since he merely repeated a familiar pattern. The builder and first owner was William A. Hall, an entrepreneur who sponsored several groups of dwellings in East Cambridge. The fourth stories of the two middle houses were added in 1903 not long after the new Courthouse was erected nearby and there was a flurry of building activity in the area. Valued at $5500 when built, each house contained four formal rooms (parlor, library, dining and reception rooms), seven bed rooms (three of them small), and services (kitchen, storage, furnace, and halls). The complete brick entablature of the facade and the square headed entrance are typical of Greek Revival row houses. The elongated windows of the second floor are proportionate to the eleven-foot ceiling heights and indicate that the principal drawing rooms are on the piano nobile (second level). Interiors of these houses have fine marble mantels, and the wood trim is impressive. Doors on the main (second) floor are over eight feet in height and are surrounded by excellent architrave moldings with crossettes. The front parlor on this level has a plaster ceiling with recessed panels of a kind as fine as Greek Revival craftsmen could devise.

A comparison of this block with five other groups of row houses and their assessed values at the time of their construction will underline basic similarities as well as the variation in details which were possible within the formula. Somewhat earlier in date (1842) and less costly is the block of five dwellings at 34-46 Second Street built by

Jesse A. Hall, father of William and one of the most prominent figures in early East Cambridge real estate. Two stories high and without an ell, these houses contain two formal rooms, five bed rooms and services. As they are built on a hill, kitchens are placed in the basement which is on the same level as the backyards. Constructed of wood, except for party walls of brick, each house was taxed at $2000. The houses have very good woodwork -- a series of individual, projecting Ionic porches, unusually intricate front stairs whose risers form an acute angle with the stringers, a scroll newel, and handsome interior trim -- but the wooden mantels in parlor and dining room are unusually plain. Three blocks away at 67-75 Spring Street are five wooden houses built in 1843 with a value of $2400 each. The houses are 25 feet in width and the facade has a simple entablature and lone pilasters at each corner. The houses have rear ells to provide additional service space and bed rooms, good marble and the elaborate scroll type stairs. Across the street at 72-78 is a row of four dwellings constructed in the same year and by the same builder, Thomas F. Norris. The lower evaluation of $1605 can be explained by the narrower lots (22 feet) and the simpler facade with neither pilasters nor entablature but with projecting paired porches supported by simple Doric columns. Fourth on the list is 137-145 Otis Street, a simplified, 22 foot row house composition with neither porch, entablature, pilaster, scroll newel, nor marble mantel and with only a one story ell. Its $1600 evaluation can only be explained, in comparison to the previous example, by its later date, 1851. Last

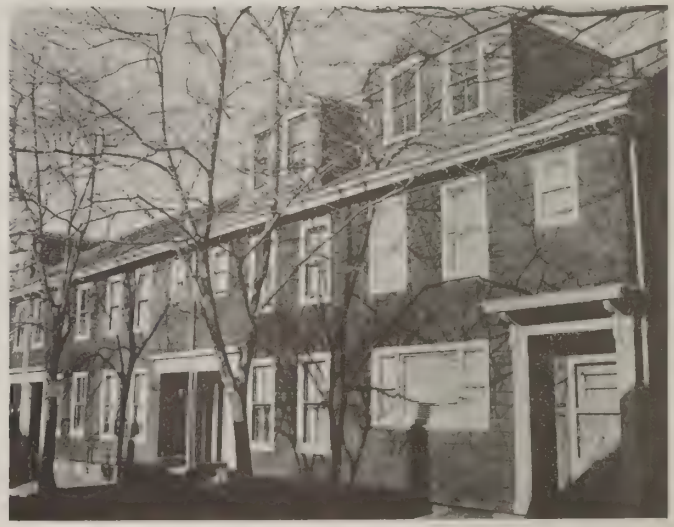
164. 84-92 SPRING ST., 1844.

in the comparison is 84-92 Spring Street, still narrower (20 feet) and lower (one story to the main entablature), yet it followed the basic scheme. Reduced to living room, kitchen and three bed rooms, it was valued in 1844, the year of its construction, at only $500. Thus we have a hierarchy of economic variations on the row house theme.

A double house differs from two adjacent row houses in being designed to have windows in three outside walls rather than two. In such

165. 72-78 SPRING ST., 1844.

166. 137-145 OTIS ST., 1851.



167. DOUBLE SIDE HALL HOUSE TYPE.

168. DOUBLE CENTER HALL HOUSE, 102-104 SCIARAPPA ST., 1840'S.

169. 66-68 OTIS ST., 1846.

170-171. GREEK REVIVAL PORCHES, 320 HARVARD ST., 103-105 OTIS ST.

a situation two different plans are possible: two side hall houses set side by side and entered from the street or two center hall houses set back to back and entered from the side yard. Both schemes are used by later day Greek Revival builders. A second element of choice is whether the gable is set toward the street or toward the side yard. (Quite unusual is the use of an entrance pavilion and cross gables as at 66-68 Otis Street, 1846, a house already mentioned for its elaborate ornamentation and unfortunate modernization). One additional variant, and one of the most delightful features of Cambridge Greek Revival houses, is the type and placement of the porch. There are recessed porches and projecting porches, small entrance shelters and long verandas; the latter can be placed all the way across the front or along the flank though side porches on narrow East Cambridge lots are rare. The numbers and variety of Greek Revival porch designs found in East Cambridge make this feature particularly worth noting here. A simple item such as this gives one an indication of the many variations on a standard theme that are typical of architecture of the vernacular.

The single Greek Revival house in East Cambridge practically always follows the side hall plan. The earlier workers cottage (narrow end to street, center hall entered from side) had lost favor by the 1840's. Flexibility in size is attained by the height to which the house is carried: 1, 2, or 3 stories. The district's most delightful one-story Greek Revival house of about 1845 date is one that was moved to its present location at 318 Hurley Street in 1872. With pilaster strips and complete entablature carried around the sides as well as the front, the decorations of this house are more elaborate than most structures in the Greek Revival vernacular. The entrance is a complete composition with Ionic pilasters framing the door and lights, and the architrave is scored with two lines to recall the three part architrave of the Ionic order. 134 Thorndike Street (1846), on the other hand, exemplifies a relatively rare three-story model.

The best preserved Greek Revival in East Cambridge, save for its entrance door, is 69 Thorndike, built by Moses Bates in 1844. Although the interior has been sensibly adapted to two flats in recent years, the original character of the house has been maintained with much sensitivity. If other home owners on the street would restore their houses with similar care and taste, Thorndike Street would be the show place of all of Cambridge. Three bays wide with the entrance pushed to one side, the facade readily explains the interior of the dwelling. Floor length windows on the ground floor and smaller ones above (some retaining the 9 x 12'' lights) are characteristic of the period. The presence of corner pilasters gives a sense of completeness to the facade; a comparison with some of the other facades in the block shows how much is lost when such decorative accents are

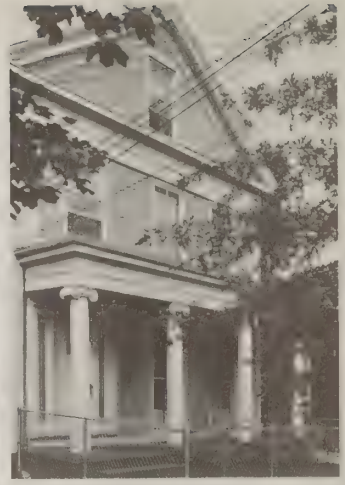
torn off. The gable suggests a Classical pediment although the horizontal cornice is not carried all the way across the facade. Flush siding on the facade, if not on the sides, emphasizes the importance of the pilasters and at least recalls the ashlar construction of the original Greek prototypes. The pitch of the roof is a compromise between Greek prototype and Yankee practicality. A slope as low as a proper Greek pediment would not allow sufficient headroom in the attic, a defect that a later generation of practical housewrights would entirely remedy once their interest in things Greek had faded. Finally a good front porch carried across the whole facade displays quite "correct" Ionic capitals but has curious reeded columns. All in all this is a text book example of a single-family Greek Revival house of the 1840's, and we are fortunate that it is so well maintained.

172. 318 HURLEY ST., c. 1845.

On the interior of the average East Cambridge residence there are two centers of architectural interest: the stair and the parlor fireplaces. Beyond these, the interior finish of the house is apt to be well executed but routine.

Three kinds of stair designs are to be found in houses of the period. The most elaborate curls both the hand rail and bottom (curtail) step into a scroll shape about the newel post. Graceful in contour, the deep incision of the spiraling curtail (bottom) step creates a veritable dust-catcher. The rounding shape of the curtail step and hand rail is reflected in the bowed contours of the next three or four steps above and it imparts a graceful, cascading effect at the bottom of the flight. Sometimes, as at 36-46 Second Street, the risers form an oblique angle with the wall rather than the usual 90 degree angle,

173. THREE-STORY GREEK REVIVAL HOUSE, 134 THORNDIKE ST., 1846.



174. 69 THORNDIKE ST., 1844.

175-176. GREEK REVIVAL STAIRWAYS, 61 OTIS ST. AND 21-23 FAYETTE ST.

177. STAIRS, 46 SECOND ST., 1842.

178. SCROLL NEWEL POST,
84-92 SPRING ST., 1844.

179. NEWEL POST, BACK STAIRS, 46 SECOND ST.

and this gives something of the effect of a spiral stair. Toward the top, the stairs again bend easily in a quarter-circle and the rounding movement is repeated in the wall, strings and hand rail. The handrail curves in this manner at each floor and flows from top to bottom without interruption. Balusters are simple, rounded, and sometimes slightly tapered. This elaborate scroll newel goes back to Bulfinch's work on Beacon Hill, and it was used continuously in most expensive residential work in East Cambridge, Cambridgeport, and Dana Hill until the Civil War. Its use therefore is not confined to Greek Revival houses alone.

An intermediate stair design uses straight runs for the strings and hand rails and employs a heavy newel post with a pot bellied profile. Turned from a five-inch timber, this design avoids the polygonal faces that become popular after the Civil War, but it also lacks the grace of the earlier scroll design. The pot-bellied newel appears in East Cambridge in the mid-forties (84-92 Spring Street, 1844), and it is used through the sixties. This design is employed for the upper floors in elaborate houses or for the first floor newel in simple houses after about 1845. It is usually finished a dark natural wood as is the handrail, but the simple, round balusters were painted.

The third and simplest stair design utilizes the same straight runs and handrail just described, but the newel post is even simpler. It is, indeed, nothing more than the three-inch post with nicely turned knob and shank that had been used in Early Georgian building. In Greek Revival houses this newel design is utilized for the back stairs in expensive houses, the upper floors in moderately priced dwellings, or for first floor stairs in the very simplest interiors.

The second center of architectural interest is the parlor fireplace. Of these there are two kinds, conventional hearths for burning wood and coal grates. For wood burning fireplaces of the 1830's and '40's, the most common mantel design is made of black marble and follows a simple, rectilinear form. A grey marble composition with panels decorated with anthemion shapes in low relief is employed in more elaborate rooms, while a white marble composition with an escutcheon type keystone is used for the most ambitious interiors. Usually designed with a round opening and somewhat shallower (inches in depth), coal-burning fireplaces equipped with iron grates appear in East Cambridge houses about 1845. In any case the mantelpiece is placed against the chimney breast that projects into the room. In upper bed rooms and in simpler houses the mantel casing is of wood, while some unimportant rooms with no mantelpiece at all have only a wooden shelf above the opening to the flue.

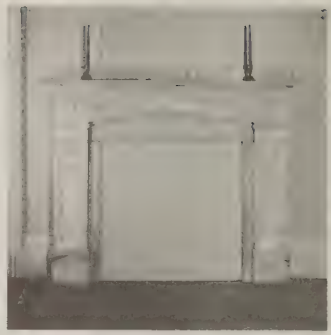
The internal woodwork of these houses is worthy of mention. Again the degree of elaboration of the wood trim differs with the costliness

of the house and the relative importance of the room within the house, but always it is composed with stock items. The most expensive door and window trim contain shallow recessed panels in which are set rosettes or anthemion designs and often crossettes are used in the upper corners. Since the wood work is always painted, the fact that this ornamentation is a casting made of a putty-like material and not hand carved cannot easily be distinguished. In addition, the window and door frames of important rooms often have a projecting cornice or a pedimented lintel to add richness. As in the eighteenth century, such rooms still provide recesses in the window jambs into which inside shutters can fold. Bed and service rooms employ less complicated woodwork, but the door and window casings are generally accented with moldings of some complexity and often the angles of the frames have a square lintel block that projects slightly in front of the molding at the corners.

A final matter concerns the mechanical equipment of houses of this period - a somewhat difficult topic to discuss since the original facilities have all been replaced by modern ones. In general fireplaces of the late 40's and 50's are shallow and equipped with coal grates. The chimney breasts always project into the room and are visually the more important since the plaster cornice is brought forward around them. Less important rooms merely have an outlet through which to connect a stove pipe with the chimney flue. Although expensive, a central hot air furnace could be found in large Boston dwellings by 1840. There, heat ducts were provided to rooms only on the two lower floors and sometimes to only the first one; upper chambers or those in the ell would have individual grates or stoves. In the 1840's large houses with furnaces on Dana Hill often omitted fireplaces in the individual rooms. Since all the houses inspected in East Cambridge of 1820 to '70 date were provided with fireplaces or stove outlets in all rooms, it is doubtful if they originally had furnaces.

Plumbing has been subject to even more updating than the heating facilities, and it is safe to assume that no unaltered bathroom or toilet facilities exist. According to tradition in the Moses Taylor family, their former house at 100 Otis Street, dating 1848, had the first full bathroom in East Cambridge. Such plumbing installations must have depended on private wells and cesspools, however, as Cambridge did not start to work on a municipal water system until 1852 nor a sewer system until the middle 1850's. (The sewer on lower Cambridge Street for example was laid in in two sections in 1850 and 1857.) A company to produce illuminating gas was franchised by the City in 1852, and electric lines were strung through East Cambridge in 1887. But electricity was introduced into the individual houses at widely different times. 59 Otis Street, for example, was not wired for electricity until 1922.

180 67 WINTER ST., 1838.

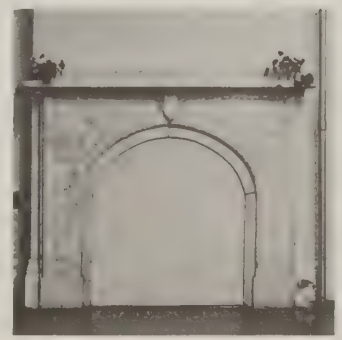


181. 61 OTIS ST., 1851.

FIRE PLACES

182. 109 THORNDIKE ST., 1857.

183. 61 OTIS ST.



184. 84-92 SPRING ST., 1844.

Italianate - Bracketed Style

The Italianate style, generally speaking, was too complicated for the small house. A large structure and plenty of land was needed to effect the irregular massing and picturesque setting that the style required. In small structures the current enthusiasm for the Italianate fashion was recalled by an overlay of bracketed ornamentation upon the facade of a house that was not notably different from the Greek Revival. In the course of the 1850's the bracket became the symbol of up-to-dateness and ornament of that derivation displaces the Classical forms of the Greek Revival.

The Bracketed style has a few characteristic details. Round headed windows are popular; almost always one is placed in the facade gable, and often the form is used in bay or oriel windows. In front entrances the old Greek single door with side lights is replaced by double doors which are filled with round-topped, glass panels. Classical features are rejected as old fashioned; gables are no longer treated as pediments with a horizontal cornice carried across the facade at eave level. Pilasters are discarded in favor of quoins or simple corner boards. Classical columns are less in evidence than before as porches are carried on plain square posts that are often paired and connected by arched wooden tracery. Hoods over doors or windows are frequently supported on elaborate wooden brackets.

More important, the massing of the house tends to somewhat greater verticality than in Greek Revival times as interior ceiling heights increase, and the roof slope is made slightly steeper than before. The house mass becomes more plastic; the overhang of the cornice is emphasized by the series of brackets that append from it; bay windows, almost never used in Greek work, become common. Windows and doors are emphasized by additions of cornices and sills that project beyond the regular frames and are supported by yet more brackets. Sometimes these cornices assume the proportions of hoods. This growth in plasticity, however, is not confined to Bracketed buildings alone; it is part of the gradual change in nineteenth century architecture which first becomes noticable in Greek Revival work and which continues far beyond the Bracketed style to reach a climax in Queen Anne work of the 1880's.

185. NEWEL POST, 109 THORNDIKE ST., 1857.

186. BRACKETED PORCH POSTS, 131 OTIS ST., c. 1855.

187. GLASS DOOR PANELS, 21-23 FAYETTE ST., 1848

188. PORCH HOOD WITH BRACKETS, 129 OTIS ST., c. 1855.

East Cambridge has several good Bracketed houses of relatively modest size: 134 Otis Street (1868), 101, 109, and 116 Thorndike Street (1868, '67, and '65). Although disfigured with a recent veneer of imitation stone, 110 Thorndike is potentially the best example in the area. The important thing about these dates is that, as before, this vernacular building was about fifteen years behind fashion.

Although most dwellings follow the side hall plan (double parlors, plus dining room and kitchen in the ell), there is some variety in the relation of these rooms. Sliding doors connecting parlors are no longer as popular as in Greek times. 134 Otis and 116 Thorndike Streets combine the two parlors into a single room, and 107 and 109 Thorndike Street have double parlors but they are connected by a conventional door placed off center so that more flexibility is allowed in their use. Second floors generally contain three large bedrooms plus the small "hall room" over the front door and a servant's room over the kitchen; two finished rooms and two large storage closets are located in the attic.

Stairway designs show important signs of change. The scroll newel of Federal and Greek Revival times is abandoned in favor of a stout, turned newel post that is similar to the pot-bellied newels of medium

priced Greek construction. However, the new newels are larger (8 inch diameter) and the moldings heavier. They usually stand on an octagonal base. The handrail is wider and has a more complex profile and the balusters are thicker and elaborately turned. Although both stairs and rail turn at the head of the flight, the graceful, sweeping quality of earlier stair design is lost.

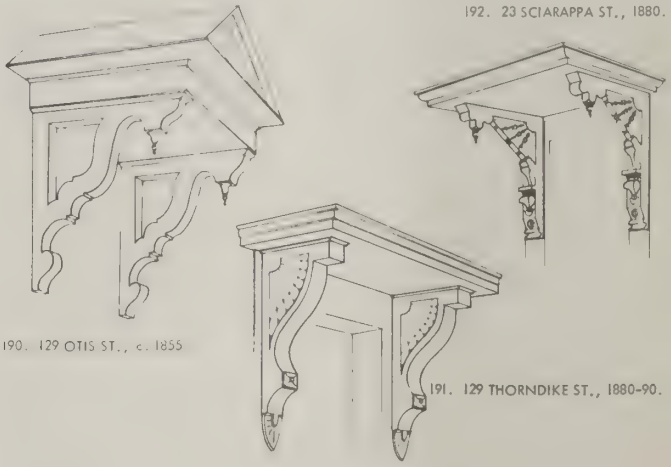
189. 134 OTIS ST., 1868.

Marble mantels continue in popularity and those in East Cambridge houses show only minor differences in appearance from earlier solutions. Almost all are now equipped with round-headed coal grates, and the mantels of grey and white marble employ more intricate moldings. All of these moldings, however, could be machine cut.

The house interior undergoes a marked change of feeling as natural and dark-stained wood work replace the white painted surfaces of Greek Revival times. Even in modest houses, the quality of wood used for doors and trim is very good. Ceilings are higher, the plaster cornices which crown them heavier than before. The molded plaster rosette set in the center of the ceiling becomes quite ornate. After the Civil War gas outlets become usual. At this time also, the newel posts on the main floor are drilled to accommodate a pipe for illuminating gas.

The last notable characteristic of the interior has to do with the decorative glass panels that are placed in front doors about this time. Sometimes the design is only etched, but often it is both cut and etched. Designs range from diaper patterns to conventionalized fruits and flowers. Light coming into the somber interior through the facets of cut glass and small areas of clear glass form a sparkling and handsome adjunct to the Victorian interior. Sometimes these panels are used for interior doors or windows as well as for the main entrance. In all likelihood these decorative panels of glass were produced in East Cambridge at the New England Glass works, but this point has not been conclusively proved. It should be noted that the side lights of a few Greek Revival houses sometimes contained decorated glass panels. In these, however, the diaper designs were generally etched, not cut.

Finally some explanation should be given regarding changes in the design of brackets and their subsequent use. Although primarily associated with the Italianate style in the late 1840's and '50's, bracket decoration long continued a very popular element of design. Inexpensive to manufacture, when tacked on a building they "dressed it up" considerably. Soon after it was first devised by experimental architects about 1840, the bracket motif entered the vernacular and continued in use for fifty years. Thus the presence of a bracket is no sure indication of date nor its presence sufficient basis by itself for designating a building as Italianate.



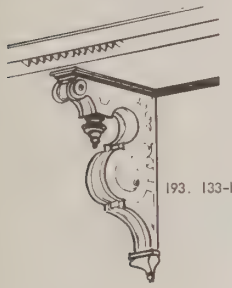
192. 23 SCIARAPPA ST., 1880.

190. 129 OTIS ST., c. 1855

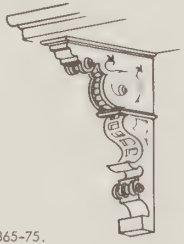
191. 129 THORNDIKE ST., 1880-90.

The vernacular architecture of East Cambridge contains no examples of the earliest phases of bracket design and also lacks the very large brackets that were used nearby on Dana Hill. Three stages of bracket design can be noted. Brackets constructed in the fifties and sixties are moderately large in scale, fashioned of heavy, solid pieces of timber and often the center of the composition is left open since the

bracket is made of three members: one vertical that abuts the wall, a horizontal piece that supports the overhang, and the long strut that usually assumes a curvilinear profile. Turned work in moderate amounts is present in the form of pendants. In gables the intrados of the bracket is cut parallel to the angle of the raking cornice while the plain sides are placed vertically.



193. 133-135 OTIS ST., 1868.



194. 122 GORE ST., 1865-75.

In the second stage, after the Civil War, brackets are still large in size but the center area is generally solid. More important, the brackets, which may still be very thick, are actually built up of a number of one-inch boards, each of which was easy to shape independently before being glued to the others. A much used technique of achieving decoration is to cut the outside boards with a sharp, thin jig-saw incision; another method utilizes sections of turned wood that are cut in half and glued to the surface; a third means of decoration cuts out intricate shapes from 1/2" boards and applies them to the bracket sides as a kind of low relief. All ornamentation is formed with the aid of a machine and the effect depends upon a general richness rather than upon subtleties of hand execution. Standard designs are produced in quantity. Apparent in many parts of East Cambridge, and used to "modernize" the front doors of many older buildings about 1870, are several different bracket designs.

The last phase of bracket design falls after 1880. A few medium sized brackets, made as hoods over doors, have turned or chamfered struts, but most brackets of this phase are relatively small. By this time the bracket has declined several notches in fashion and is used only in the cheapest kind of building where a semblance of decoration is desired. Jig-saw and glued techniques are still used, but the decorative shapes show an indebtedness to the Queen Anne movement with reeded intrados or fan designs in the sides. Finally, about 1895, the bracket disappears entirely, its function having been usurped by the more elaborate stamped metal cornice or Colonial Revival modillions.

Mansard Style

East Cambridge's best residential architecture was erected before the Civil War. At that time the quality of the area as a pleasant, uncrowded section was established and the most desirable lots on the gentle slopes of Putnam Hill were built upon. Following the War a trend to less expensive multiple dwellings began in which the space allotted to the individual family was significantly reduced. The ever more crowded conditions and lower budgets for the post war buildings were not conducive to outstanding architecture. As a result, the later phases of nineteenth century architecture are not well represented here. To this condition there are, fortunately, a few exceptions for several interesting Mansard houses were built here about 1870.

East Cambridge got its first mansard roof houses soon after the feature was accepted in Boston about 1857. In 1861 John W. Rollins built the row of seven brick houses at 83-95 Third Street across from the Old Courthouse. Of two main floors plus high brownstone basement and mansard, this row of dwellings is much closer to contemporary work in the South End of Boston (row houses built on

195. 83-95 THIRD ST., 1861.

196. WORCESTER SQUARE, BOSTON, 1859

197. 1-3 ARLINGTON ST., BOSTON, 1861

Worcester Square, 1859) than to houses built concurrently in the Back Bay (1-3 Arlington Street, 1861). The point is important because South End work belongs to the vernacular with old-fashioned Italianate overtones while Back Bay buildings illustrate the new Academic French manner that was being discovered and imitated by professional architects in Boston. Thus again East Cambridge, as before, follows the conservative rather than the progressive current of building. In the Third Street block, only the mansard roof is symptomatic of the new manner, and that was undoubtedly selected for purely practical reasons. The round arched entries with rope moldings and the curious curvilinear brownstone lintels on the facades look back to the early 1850's.

The practical advantages of the mansard roof must be explained at once. By breaking the roof into two sections with two roof slopes and by giving the bottom roof a steep pitch, additional head room in the attic story is obtained. In this manner the attic story can be made practically as large as rooms on the lower floors, and a full extra story of usable space can be obtained without the expense of carrying the outside walls (often of masonry) through an additional story. The gain in space was particularly advantageous in East Cambridge because desirable building lots on the hill were rapidly being occupied. The growing congestion is indicated by the fact that of some hundred mansard living units constructed in the area, only a dozen were built as single family residences.

198. 457-59 CAMBRIDGE ST., BUILT c. 1848, REMODELLED, 1870.

The advantages of the additional story were also appreciated as the process began of crowding two or three families into the space originally built for one. With the aid of mansard roofs, old single houses were often made over into flats. A most instructive example is 457-59 Cambridge Street where a large double Late Georgian house, built about 1848, was changed into stores and apartments in 1870. A new mansard roof was added to the front part of the house to create what in reality is a full fourth story, but the slope of the original roof was retained on the rear (and north) side. Another example of a mansard added to an older dwelling, this time Greek Revival, is 112-14 Thorndike Street.

Visually, the effect of the mansard roof on a free-standing house is to make it appear squarer in shape than if the house were covered with a ridge roof. Generally, however, Mansard style houses of the '60's follow the basic plan and outline of earlier Greek Revival dwellings.

199. 462 CAMBRIDGE ST.

200. 390-392 CAMBRIDGE ST., 1869.

Other than the mansard roof, the characteristics of the French-inspired style are somewhat hard to specify by the time they have amalgamated at the level of vernacular architecture with features from other styles. A pronounced feeling of verticality is one quality of these buildings, a characteristic that results from the tall roofs as well as the high-ceilinged rooms. A building like 390-392 Cambridge Street (1869) emphasizes the vertical element even more than is necessary by the way the tall, narrow entrance pavilion pushes out in front of the main building and is capped by a mansard roof of its own.

This same house, clearly the most elaborate Mansard in the district, is somewhat closer to the academic norm than most: the pediments over the windows and the fluted brackets that support them, the greatly elongated windows of the main story, the dentil course of the cornice, the elaborate dormers, the segmental arches of the entrance porch and the exaggerated keystones are all related to the academic tradition. More fanciful, however, is the lambrequin edging along the top of the mansard roof that looks more like a curtain than a structural member. The brackets of the cornice, however, would be at home on a late Italianate facade.

201. 139 SPRING ST.

202. STAIRWAY, 392 CAMBRIDGE ST., 1869.

Another good Mansard dwelling stands at 139 Spring Street. A handsome little square brick house of two stories, it once stood in a sizable lawn at the corner of Sixth Street. Today it is all but obscured by the later row houses and tenement blocks.

The interiors of Mansard houses are not unlike those found in Bracketed dwellings. Woodwork was originally dark although much of it has since been painted a light color. The high-ceilinged rooms have heavy plaster cornices, chimney breasts project some eighteen inches into the room, and round headed fireplaces are equipped with coal-burning grates. Merely because they generally date later than Bracketed work, stair designs in Mansard houses reflect changes that began to affect American economy after the Civil War. As labor prices climbed, ways were found to simplify the building process. Straight flights of stairs now replace curving stairs of earlier times and the handrail runs between newels at each end of the flight. The new arrangement, however, is less graceful than the continuous flowing rail and curving steps of the Late Georgian and Greek Revival edifices. Concurrently the bottom newel takes on a larger, more monumental form. Square or polygonal in plan rather than turned from a single piece of timber, the intricate shapes of these newel posts are compiled from a number of parts and moldings.

Queen Anne

The Queen Anne movement is poorly represented in East Cambridge. After 1870 nearly all residential building in the area consisted of multiple family dwellings. Tall, three-decked apartments or crowded tenements were sandwiched at the rear of or between existing houses in the old, built-up sections or they were concentrated in equally crowded, low-lying areas west of Seventh or south of Hurley Streets. Much of this late building is architecturally nondescript and lacks even the flamboyancy of some Queen Anne tenements in Cambridgeport.

As they were low rental properties these buildings could not afford to be very ambitious in architectural terms. The only structures in East Cambridge meriting the larger investments of capital that made characteristic Queen Anne ornateness possible were public edifices or commercial properties along Cambridge Street. A fairly ambitious building, for example, at 305 Cambridge Street (1877) contains a store on the ground floor and two halls above. Constructed of brick, it incorporates a number of Queen Anne decorative adjuncts. The best example of Queen Anne design in the district is the Putnam School, a handsome masonry structure of 1887 by James Fogerty.

The intellectual aims of the Queen Anne movement, as we saw earlier, were fine craftsmanship, honest use of materials, untrammeled interior space, and freedom from the restraint of academic rule or archaeological precedent that might impede a logical, workable solution. At the level of everyday, practical performance, however, these enviable ideas were often lost sight of. Craftsmanship deteriorated into quantity machine-made decoration, respect for material was lost in search for materials that responded to the machine process, creative freedom degenerated into a confusion of picturesque features lifted from any context, interior space was cut into small, irregularly shaped rooms and dark corridors.

The movement is too diverse and individualistic to permit any easy catalogue of characteristics. But in East Cambridge some of the evidences of Queen Anne work that one sees are: exterior walls of wood articulated into panels by dividing frames and filled with a variety of wood surfaces (clapboards, tongue and groove set in vertical or diagonal panels, shingles cut in all manner of patterns), a large range of late bracket forms, wood surfaces decorated by means of gouging, gluing, chiseling, turning or chamfering until nothing remains of the plain wood member as it came from the saw mill. When the possibilities of wood are exceeded, the designer has recourse to molded synthetic material for such details as the curious medallion busts above the entrance of the modest but conspicuous row houses at 53-59 Sciarappa Street (1883). Because of this emphasis on

surface richness, Queen Anne buildings, more than any others, suffer from the recent coats of asbestos shingles or metal siding that have been added. Deprived of this element of ornamentation, the designs become characterless.

The search for variety also appears in masonry construction. Brick walls, for instance, are laid up in many different ways. The facade of 305 Cambridge Street, the store and hall mentioned before, employs six patterns of brick masonry to say nothing of the enlivenment of the surface by recessed panels, corbels, and inserts of foreign matter (polychrome tile). The facade is further embellished by the jig-saw ornamentation in the wooden frames of the segmental arched windows and by blocks of rough brownstone in the fire walls.

203. 305 CAMBRIDGE ST., 1877.

204. 53-59 SCIARAPPA ST., 1883.

But the crowning glory of Queen Anne building is the stamped metal cornice. A new material in the repertoire of the builder, galvanized iron possessed the incomparable quality of taking any quantity of ornamentation without adding to the cost. Pressed in metal dies and very sturdy (examples are still in good condition after eighty-five years), these galvanized iron cornices show nineteenth century American design at its most exuberant. Access to such unlimited ornamentation was too much for most designers, and the iron cornices are often chaotic. Each builder seeks to use ornamentation more profusely and with more originality than his neighbor.

Queen Anne building also brings to a climax the search for individual assertiveness and plasticity that had begun to develop in Greek Revival times. Between 1840 and 1885 the silhouette of the American residential street becomes successively more serrated as roof slopes change from moderate to steeper (in the Bracketed manner) to very steep (with the mansard roof). When, however, Queen Anne builders construct their top floors as full stories, the verticality of the facade is strongly emphasized. At the same time the restless, three-dimensional quality of the house front is reinforced by appended bay windows, projecting fire breaks and lusty galvanized iron cornices.

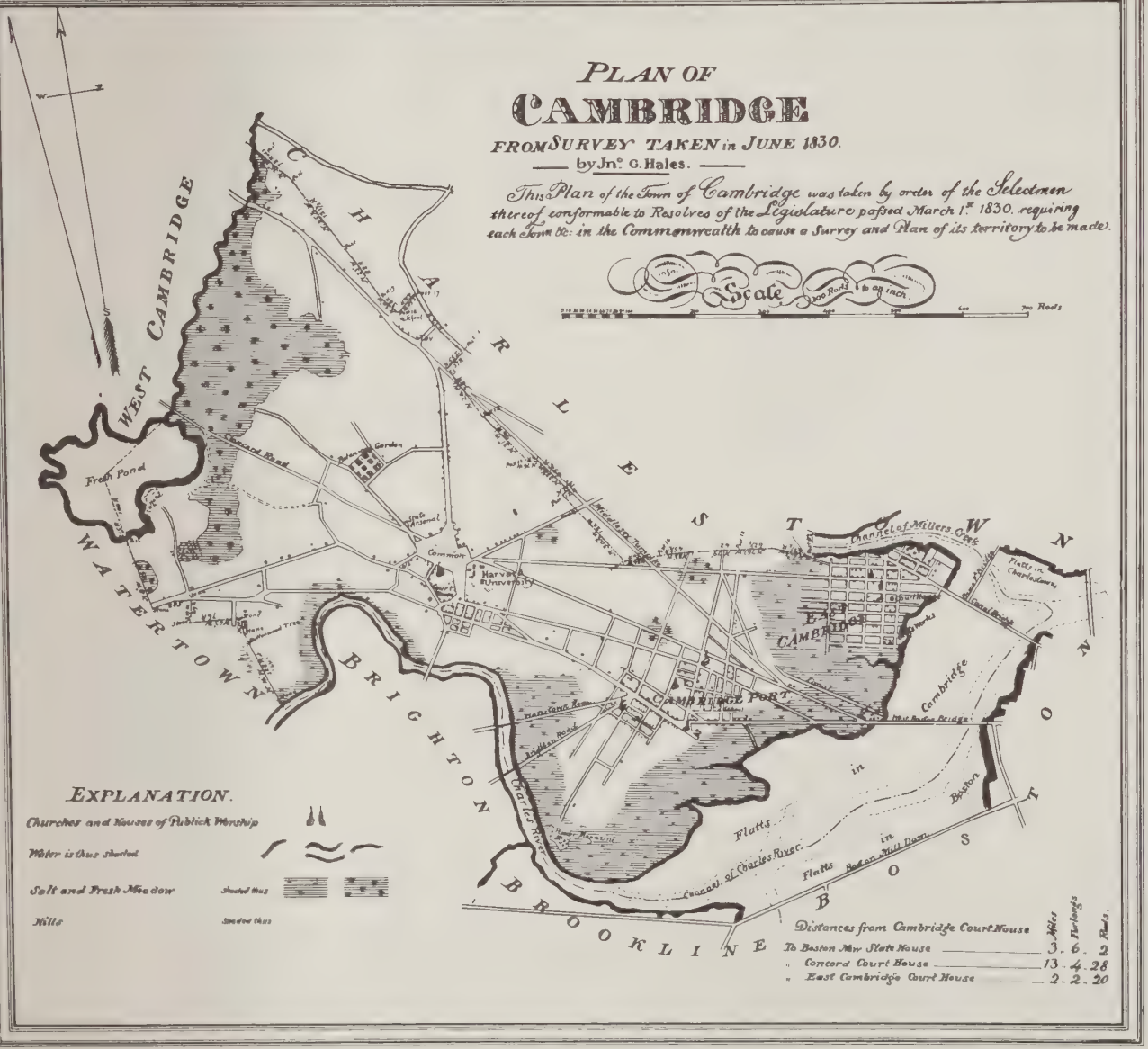
Inside, this style is characterized by even darker varnished surfaces than the natural woods of Mansard houses. Rooms are still excessively high and a wooden picture rail set some twelve inches below the ceiling frequently takes the place of the older elaborate plaster cornice. Doors are often provided with transoms and the woodwork of stock design varies but little. The face of the trim is cut with complex profiles and the lintel blocks with a series of concentric rings. Superficially this is somewhat like Greek Revival trim but much more mechanical. Queen Anne fireplaces combine mirrors and small shelves in the overmantel, but often in simple tenements or in the upper rooms of buildings where central heating is provided, fireplaces are entirely eliminated. In large Queen Anne houses, the stair composition is composed of several runs and changes of direction. In East Cambridge tenements, however, the stairs are generally single-run; newel posts of complex shapes are turned from 6 x 6 timbers and terminate in some kind of globe. In some triple deckers or in buildings where stores occupy the ground floor, the stair hall is reduced to the width of a flight of steps; with stairs enclosed by walls, there is no place for a balustrade. Wainscoting of vertical tongue and groove boards is usual in the hallways.

The last mansion to be constructed in East Cambridge was erected in 1895 at 142 Otis Street for Mrs. Catherine Coveney. Designed by John Muldoon, the architecture of the house is exactly what one would expect for the period -- Queen Anne moving to the point of the Colonial Revival. Still Queen Anne are the roof, central dormer window, and the paired bay windows; inside, the stair rises in three picturesque runs and two corner fireplaces exemplify a similar Queen Anne taste. But the detail of the house inside and out is Late Georgian and relatively "correct". As in all Colonial Revival building of the time, much use is made of the machine-made molded decoration for window trim, capitals and mantelpieces.

205. STAMPED METAL CORNICE, 1030-32 CAMBRIDGE ST.

206. 140-42 OTIS ST., 1895.

But the days of large houses in East Cambridge were over. The vacant land remaining was in the low-lying, less desirable residential areas. (Space for the Coveney house was obtained by demolishing two older dwellings.) With apartment building also pushing land values high and the district becoming a workers quarter, it was natural that East Cambridge men of wealth went elsewhere to build their own homes. William Goepper, whose family had long been active in the area went to the top of Dana Hill (340 Harvard Street) to build his house in 1897 -- a building, incidently, that is similar in design and in size to the Coveney house in East Cambridge.



207. HALES' MAP, 1830.

BUILDINGS SHOWN ON HALES' 1830 MAP
EXISTING
DEMOLISHED
WINTER
ST
STREET
FIRST
SECOND
THIRD
GORE
SCIARAPPA
CAMBRIDGE
FIFTH
SIXTH
SEVENTH
EIGHTH
FULKERSON
OTIS
THORNDIKE
SPRING
HURLEY
CHARLES

208. SCIARAPPA AND THORNDIKE STS.

209. CORNER OF THORNDIKE AND FIFTH STS.

210. LOOKING WEST ON THORNDIKE ST.

Characterization of the Area by Street

Thus far the discussion has centered on the individual house. Now it is time to discuss streets as entities. For although the character of each building is important, the environment in which it is set is equally vital. Time and again one has seen a great building spoiled by a poor setting; in the same way the total effect of a well related group of buildings may be excellent even though the individual specimens are only moderately good. When dealing with an architectural ensemble, the total effect can be more than the sum of the parts.

The intent, in this section of the report, is to view and evaluate East Cambridge in such natural units as entire streets. In doing this we realize that the urban environment is a much more complicated matter than the architectural design of a series of buildings, that it results from a whole complex of factors. In addition to the architectural component (the size, proportion, material, style and condition of each building), the urban environment is influenced by the way these buildings are related in space: how the solid masses of the various buildings relate to each other and to the street, whether they are close enough together and to the street to form a channel or corridor of the street or whether each building is isolated in its own surroundings, how the sequence of spaces leads from one to another. The urban environment depends on the way buildings are related to trees or gardens or planted areas and how they are maintained. It depends on how the inhabitants use the streets, whether the streets are free for pedestrians or choked with traffic and parked cars, on what kinds of signs and other street furniture are put up, on what materials are used to surface the roads and sidewalks, on how the street is maintained. This environment depends on the ages and numbers and character of the people who inhabit the area, on how they use the buildings and keep them up.

As a coherent urban environment the section of Thorndike Street between Third and Sixth is the most successful street in East Cambridge. Although East Cambridge may have had more impressive streets a hundred years ago, Thorndike Street today possesses qualities which make it outstanding, and, although often altered for the worse by inharmonious exterior wall coverings, the architecture of the houses is consistently good if not outstanding. The residential quality of the street is more consistent than any other in the district as it has not been marred by the intrusion of large-scale, non-residential buildings nor by irreparable destruction. More than that, it retains the scale and feeling of an area built for single families even though most of the original single-family dwellings have since been subdivided. The area avoids the awesome anonymity that comes with large apartment buildings; the presence of each family here is separately announced by a front door and often a bay window, by the

small spaces between the many separate houses and by their changes in roof heights and shapes. Constant reiteration of windows expresses the buildings' similar internal function. The street is characterized by a pleasant human scale and an overall vibrancy.

The spacing, alignment, and massing of the houses along Thorndike Street is particularly successful. Although some houses are set back a few feet from the street, most, following the old pattern inherited from the 18th century, are built out to the edge of the sidewalk, thus reserving a fair amount of space for the back yard at the rear of the 100 foot deep lot. The predominant or most common siting places the narrow end of the house to the street although a few are set broadside. This variation in siting results in changes in lot frontages and in differences in the intervals between houses (widths of side yards). There are no large empty gaps left by vacant lots nor excessively large side yards to destroy the sequential rhythm of the house fronts. Nor are there any structures so tall or so bulky as to be out of scale with the small houses. On the other hand, the alternation of gable ends and low eave lines together with slight differences of house size add a welcome variety to the street. Where row houses are blocked together, the presence of bay windows, projecting steps, or dormer windows is sufficiently strong to maintain the cadence of the close-spaced separate dwellings.

In much the same way, there are minor architectural differences between houses. These variations are not strong enough to disrupt the larger sequential continuity, but they enable Thorndike Street to avoid the dreary monotony that besets so many close-built areas of our cities. The urban environment is further enhanced by planting. The limited street area between the house facades is dotted with trees. Growing irregularly and not so densely as to choke the space of the street, the trees fill a good portion of the volume of the street, and a few houses have narrow lawns or gardens protected from the sidewalk by ornamented fences of cast iron. Without completely obscuring house facades, the trees minimize the differences in their materials and design. All in all, the feeling of a barren city street is avoided without obscuring the fact that this is essentially a city and not a suburban area.

Although we lack a complete historical record of every house, it is safe to say that the most interesting portion of Thorndike Street was built between 1845 and 1870. Two certain checks on the building of the area are provided by Hale's Map of 1830, which shows only 11 edifices standing in this stretch of the street and Walling's 1854 Map which depicts 37 structures. (Not all of the structures shown on these maps are still standing; a current count indicates only 5 of the Hale and 23 of the Walling buildings remain.) Of the 64 houses now standing in the three-block area, probably 50 were built between 1845 and 1865 (23 predating and 27 postdating 1854). Only six structures appear to post-date 1865, and none are modern.

Architecturally the character of Thorndike Street is more modest than that of Otis or Cambridge Streets. The land occupied by a typical single-family house on Thorndike (#70, built by Silas B. Buck in 1845) was valued at $3700. (One year before the house was built the 35-foot lot was valued at $700; the approximate value of the house, therefore, would have been $3000.) A single family house on Otis Street cost somewhat more. 100 Otis, built in 1848 by Oliver Taylor, was valued at $4500 (house $3700, land $800).

Despite its large and expensive houses, Otis Street today does not present as unified and impressive a streetscape. The less unified character is due to the intrusion among the dwellings of the overly large and bulky masses of several non-residential structures (a hospital, a public school, and a church) and of the presence of a conspicuously empty corner lot (the northeast corner of Fourth Street where St. John's Catholic Church once stood). Another factor which disrupts the street scale and unity is the way the south side of Otis Street (west of Fourth) rises to a fairly high terrace above the graded level of the street. Houses situated on this embankment tower over their neighbors. These top-heavy buildings and overly-heavy masses and the large empty hole diminish the spatial clarity of the street and destroy the rhythm and scale of the streetscape.

Nevertheless in the area's early days Otis Street was clearly meant to be the show place of East Cambridge. During the initial planning of the area, the four blocks at the intersection of Fourth and Otis Streets, the highest elevation on the 65 foot high hill, were reserved by the proprietors of the Lechmere Point Corporation. Undoubtedly these plots were set aside for churches and fine residences rather than for public buildings since the court house was to be located on Third Street and the town of Cambridge as yet had no need for extensive city buildings. The fact that this land was deliberately held in reserve until the time was right to erect suitably handsome structures is suggested by the non-existence of Otis Street structures on Hale's 1830 Map. In contrast considerable numbers are shown on adjacent Cambridge and Thorndike Streets. By 1854, Otis Street had 36 buildings between Third and Seventh Streets but only three west of Seventh.

Prior to 1845 Cambridge Street was East Cambridge's finest avenue. The widest of the district's thoroughfares (66 feet as opposed to 55 feet of the parallel avenues or 50 of cross streets), it was also the site of three of the seven churches. The lower (Bridge Street) end of Cambridge Street was also the site of the bank and early commercial

activity. By 1830, Hale's Map indicates the street lined with 22 structures (there probably were additional buildings which the map does not record), and, judging from appearances, many more edifices were erected here in the course of the 1830's. Some idea of the early appearance of the street can still be obtained from buildings on its north side between Fourth and Fifth.

211. 75 WINTER ST., 1839.

212. 83-95 THIRD ST.

Because of its direct route between Craigie's Bridge and Harvard Square, it was natural that a horse car line should be laid along Cambridge Street. Construction was begun at the Harvard Square end; by 1860 the line extended as far as the North Canal, by 1861 it reached Bridge Street. But it was a number of years before through traffic to Boston was moving along the line because of the difficulty the company h a d in obtaining permission to lay their tracks in Boston. Early horsecars to Boston from East Cambridge were routed via Cambridge Street, Third Street, Kendall Square, and the West Boston (later the Longfellow) Bridge. In 1869 the car barn was built at Cambridge Street which may indicate that traffic was increasing on the line, and by 1873 cars were moving across Craigie's Bridge and directly to Boston. At first the horsecar must have encouraged residential construction along the street. Whereas in 1854 there were only 19 edifices west of Fifth Street and the area well beyond the North Canal, the street was almost entirely lined with structures by 1873 (see color map). That Cambridge Street was still a desirable location is indicated by several mansard roofed houses built between Fourth and Sixth Streets after the Civil War. Most elaborate of these is the double house at 390-392 Cambridge Street erected in 1869. But within another decade the property had begun to turn commercial. This stage of development is evidenced by the new store constructed in 1875 at number 540 and the large wooden store and tenement which in 1882 was erected at number 469-73 at which time the good Late Georgian house (discussed earlier in the report) was moved to the rear of the lot. Although retail shops have taken over the ground floors of most buildings fronting on Cambridge Street, upper levels are utilized for apartments. The residential scale is thus preserved and Cambridge Street does not seem like an intrusion into an otherwise residential area. Providing necessary shops, the street bustles with activity in welcome contrast to the quiet, dimly-lighted side streets. The recent planting of trees along this main street by the City will greatly enhance the area's beauty and livability.

Gore and Winter Streets have a character quite their own. Because of their proximity to the highway (Bridge Street, later Msgr. O'Brien Highway) which led northwest to the interior of Middlesex County, the area north of Cambridge Street developed sooner than that to the south. In 1830 Gore Street is shown with 18 edifices with still more buildings clustered on Second Street near the intersection, but no edifices had then been constructed on Winter Street. Typical of this early building is the row of four brick dwellings of Third and Gore Streets, a two-story, hipped roof house (worker's cottage plan but larger in scale) at 86 Gore Street, and the worker's cottages at 63-79 Winter Street, (though these were not built until 1839). Presumably these streets resemble the now destroyed area which was erected near the New England Glass Factory immediately north of Bridge Street. This area was razed sometime after 1888 when the glass company went out of business and the land was taken to provide additional railroad freight yards.

When the second wave of building began in the mid 1840's, the Greek Revival edifices built on Gore and Winter Streets were less ambitious than those erected on Thorndike Street. Some delightful little cottages are hidden on the rear of lots on Sciarappa (Fourth) Street between Gore and Winter Streets; the pleasant scale and trim appearance of these houses are appealing to present-day tastes. Later, however, tenements began to crowd in the spaces between older houses or to squeeze in on the rear lots. One of the most over-crowded areas in all of East Cambridge is found in the neighborhood of Fifth and Gore.

Spring Street is only slightly less interesting as an urban residential space than Thorndike Street. The spacing of trees is more sparse and irregular, and there are more interruptions of residential con-

struction by tenement buildings. These interruptions are the more noticeable because of the smaller scale of the houses. Yet, like Thorndike, Spring is a street which would be well worth the effort of restoration.

Hurley and Charles Streets have an uneven quality. A few nice early buildings are scattered between small factories, storage yards and closely-built tenements. As late as the middle 50's there was almost no residential building on the low-lying ground south of the houses along Spring Street. A few larger factory-size structures are shown on the 1854 map, but presumably they were temporary wooden sheds as all trace of them had disappeared by the 1873 map. Several of the buildings which now stand in this area seem to have been moved in from other parts of Cambridge. This includes the charming little Greek Revival cottage at 318 Hurley Street mentioned earlier. A number of undistinguished tenements in the area of Second and Hurley were similarly moved into the area. Fortunately, for the record, inhabitants of the neighborhood recall that this was done about 1910 and that some of the buildings were dragged up Third Street by mule power from the area near the gasometer in Kendall Square.

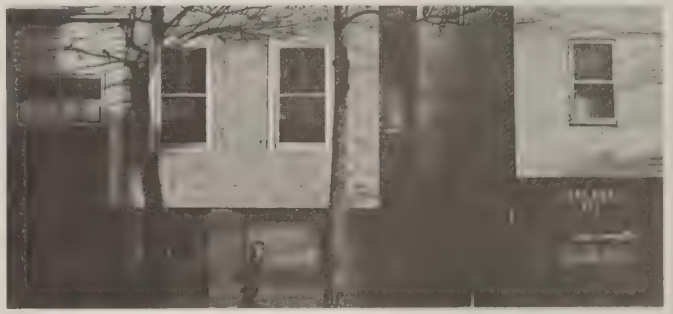
Finally, some mention should be made of the cross streets. The short lengths of the blocks in this direction (200 feet as opposed to 400 feet east-west) means that the cross streets can seldom achieve the urban continuity of the long east-west streets. Nevertheless, the cross streets can attain an impressive unity when faced with a continuous row of houses. In early decades the handsomest of these streets was certainly Second. The street on which the Court House faced, it was at one time known as Quality Row because of the fine rows of houses facing upon it. Descriptions and the 1873 atlas indicate that a fine row of houses occupied the site of the present Registry of Deeds and Probate building, but the presence of the rather grim county jail and the factories that began to accumulate along the waterfront soon discouraged further residential construction in that particular quarter.

The Third Street side of the court house square at one time also must have had an urban air with its two churches and three rows of impressive brick dwellings. Although one church (the Methodist Congregation on Cambridge Street) and the row of houses south of Thorndike have disappeared, this section still has the most urban appearance of any street in East Cambridge.

Sciarappa (Fourth) Street is today perhaps the most interesting cross street. Despite the despoiled hill-top intersection with Otis Street, where the urban scale falls apart but where, ironically, the Lechmere Proprietors had hoped to focus the interest of the entire community, there are good areas on both the north and south slopes.

Indeed the corner of Fourth and Thorndike is the handsomest intersection in all of East Cambridge. The four corners are entirely different yet they create a unified statement: a row of two-story red brick mansard houses, a nondescript shingled house set in a nice garden surrounded by a picket fence, a tall, blocky mansarded double house set as close to the corner as possible, and a delightful Greek

213. FIFTH ST.



214. HOUSES WITH BASEMENT STORES.

Revival single house with a balconied piano nobile. On opposite corners, the two mansard roofed structures articulate the space and direction of the intersection with definition and clarity. The garden provides variety and openness while the house with the fine balcony and high second story furnishes a note of architectural distinction.

Fifth Street also has its interesting aspects. Chief among these is the row of single houses with high brick basements between Otis and Thorndike Streets. So high are these basements that small shops can be introduced into them, but the fenestration and size of the stores are small enough so as not to confuse the character of the street. Further south on Fifth Street, near the corner of Spring, are a series of exceptionally nice low Greek Revival cottages. Although no longer the traditional worker's cottage plan, they provide about the same amount of space.

The scale of both Sixth and Seventh Streets is shattered by the enormous bulk of Sacred Heart Church, parish house, and school. The church, however, serves as a clear demarcation between the earlier single-family residential quarters built higher up the hill on Otis and Thorndike and the later tenement quarters of the 1860's and 70's occupying the low land. As such it helps to preserve the integrity of the older quarter and give it distinct limits.

Seventh Street north of Cambridge Street reminds us of how monotonous a uniform row of identical houses can be. This row forms a telling contrast with the neighborhood a few blocks down Gore Street, where the individual house is no larger but where the variety in spacing and massing adds so much to its attractiveness.

No explanation can be given of the change in block size from the 400 to 120 foot lengths that occurs at Seventh Street. The line between hill slope and marsh land that required some filling falls about Seventh Street and this may have determined the limit of the Lechmere Corporation's initial development. Already on an 1849 map, Sixth to Seventh is indicated as a short block and the latter street is plotted. Short blocks were repeated when Eighth, Ninth and Max Streets were laid out in the middle '70's. By fronting most of the lots on the cross rather than the long streets as had been done earlier, more street frontage and shallower lots were provided. This may have seemed more practical for the triple deckers and tenements that were erected here. But even here the buildings are instructive, for the narrow lot widths ensure a maintainance of the small scale and individual quality of each building even though it rises three stories and is too tightly backed against its neighbor. Because of its excessive crowding, this low-lying area would seriously detract from the character of the hill section of East Cambridge if it were not distinctly closed off from it by the block-long barrier of Sacred Heart Church.

215. TENEMENTS ON SEVENTH ST.

The Architectural Potential of East Cambridge

The use of the term "potential" implies that something of value in a given situation has not been entirely recognized or developed. If this is so, it may seem somewhat paradoxical to speak of the potential of a neighborhood such as East Cambridge which already is a vital, desirable place to live. Its houses are in good repair for the most part, its gardens nicely attended, the percentage of absentee ownership is very low. The social fabric of the neighborhood is stable: properties for rent or sale are almost non-existent, inhabitants have roots in the area that are strong and extend back a full life time or even several generations. Juvenile delinquincy is unusually low. There is a sense of entity and of belonging. No question about it, East Cambridge is a good place in which to live.

Physical location also makes East Cambridge desirable. Only minutes from Park Street by subway, ten minutes from Harvard Square by bus, within walking distance of numerous industrial plants, of MIT, of the new NASA site, East Cambridge is remarkably central. Yet it has the settled, neighborhood qualities of a small town or suburb. Along Cambridge Street the requisite shops, services, and recreational facilities are so handy that one does not have to go afield and the area is well supplied with schools and churches, playgrounds and a branch of the public library.

In its physical make up the district is an entity. It has specific limits that save it from the endless streets, the monotonous uniformity that dissolves one street district into the next. Because of distinguishable limits, it is immediately apparent when one enters or leaves East Cambridge. Yet within this area of less than 35 city blocks, there is considerable variation in character from one street to the next. Those who walk through the area find pleasure in this variety, and those who live there take pride in it.

Even more, the neighborhood has human scale. It is a community for families, for people who have children, for persons who wish to maintain their identities. The individual family is not dwarfed to insignificance by the size of the buildings nor reduced to hopeless isolation by vast expanses of black-topped parking lots and play areas, nor set off in ghettos by superhighways. Small houses placed close together on narrow lots bespeak neighborliness and cooperativeness with opportunity aplenty for community participation. Yet the small, closed-in back yards and garden areas provide the individual with necessary privacy. Where else in our American cities is there such sensible use of land?

Structurally the buildings themselves are sound. As all old wooden houses, they require a certain amount of upkeep. But as most of them

have been well maintained over the years, they require, in all probability, less maintenance than a jerry-built structure fifteen years old. Architecturally the houses are also good. If not of great importance when seen as individual houses, the street as a whole constitutes a fine architectural unit. It is probably the most coherent and well-scaled district in the city.

Architecturally, however, the district could be improved. The houses of East Cambridge are really much better than one might suspect at first glance. This does not mean that the houses look run down or neglected, but only that the means used to keep them up have sometimes not been well chosen. Too often individual house owners have become so intent on modernizing their homes that they have destroyed the original architectural character of the building without succeeding in creating a contemporary feeling either. Failing thus to qualify as either new or old, the remodeled building too often merely shows evidence of having been "fixed up", i.e., of having had money expended upon it.

Nothing is sadder to observe than the pointless stripping off of old ornamentation and trim in the belief that the structure is being modernized. Nothing can reduce an attractive Bracketed style building to complete anonymity faster than to rip off its hooded entrance or cornice brackets. Nothing disfigures a dignified Greek Revival design more than to cover its surfaces with a sheathing of asphalt shingles that destroy architectural accents and the shadows that come from changes in planes. A certain amount of functional improvement is necessary: storm windows are essential to comfort and economy, and some sort of metal siding can cut down maintenance costs. But when these things are added, there is no need to remove the old ornament also.

Perhaps it is only a matter of symbols. In the area today, a knotty pine entrance, sliding aluminum windows, or a plywood slab front door seems to constitute clear symbols of property improvement. It is hoped that public opinion in the district will come to realize that the restoration of a dwelling in historic character is also evidence of property improvement and much preferable to half-way modernization, that a handsome original entrance with side lights is more esteemed than a slab door, that a house with freshly painted siding and contrasting trim looks better than one covered with asphalt shingles! If all the money that East Cambridge residents are already spending and have been spending for the last fifteen years could be channeled into restoration, the area would be magnificent in terms of historic and architectural values. The money is already being spent in home improvement; it is just a matter of way it is being spent.

A major problem is to let the householders of East Cambridge know what can and has been done to restore handsome old residential districts. They should see what individual home owners and urban planners have done on College Hill in Providence, or Society Hill in Philadelphia, on Worcester Square in New Haven or in Georgetown, D. C. If East Cambridge public opinion could be persuaded to accept the standards of appearance and maintenance used in these places, then East Cambridge could become the show place of all of Cambridge in an amazingly short time.

Once East Cambridge householders learn that their houses, many of which are well over a hundred years old, have real architectural value, they will certainly take pride in restoring them. There are streets in East Cambridge that can easily qualify as Historic Districts and be protected by law from destruction or encroachment by outsiders or government action that would disfigure the character of the streets. But the success of a historic district depends largely on the way the people of the district feel about it. The people of Thorndike Street or parts of Otis and Spring Streets must want the historic classification. A program of conservation cannot be forced on a neighborhood by bureaucratic decision. It must be a community decision, something that the people of the neighborhood themselves want.

No destruction is needed here, only preservation and rehabilitation. What has been said or is implied on almost every page of this report is that the intelligent conservation of an area like East Cambridge will provide larger homes and a more human and pleasant environment -- and do it more economically -- than any multiple housing project that has yet been completed in America.

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Note: This bibliography concentrates on East Cambridge, the first area to be surveyed, although much of the material will be equally relevant to other parts of the city. Material (especially articles) dealing solely with Old Cambridge has been excluded in most cases.

Abbreviations:
CP - Cambridgeport
EC - East Cambridge
OC - Old Cambridge
CHS Proc. - Proceedings of the Cambridge Historical Society

Library code letters:
(A) - Boston Athenaeum
(B) - Boston Public Library
(C) - Cambridge Public Library
(F) - Fogg Art Museum
(M) - Massachusetts Historical Society
(O) - Cambridge Planning Board office
(P) - personal (followed by name of individual)
(R) - Robinson Hall; Harvard School of Design
(S) - Society for the Preservation of New England Antiquities.
(W) - Widener Library; Harvard University

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